HCD-MD373

SERVICE MANUAL

Self Diagnostics
Supported model

Ver 1.1 2001.06

AEP Model
UK Model
E Model
Australian Model
Chinese Model
Tourist Model



HCD-MD373 is the amplifir, CD, MD and tuner section in DHC-MD373.

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

CD SECTION	Model Name Using Similar Mechanism	NEW
	Mechanism Type	CDM55A-5SBD32, CDM55C-5BD32
	Base Unit Type	BU-5SBD32, BU-5BD32
	Optical Pick-up Type	KSS-213BA/F-NP
MD SECTION	Model Name Using Similar Mechanism	MDS-JE520
	Mechanism Type	MDM-5A
	Optical Pick-up Type	KMS-260B/J1N

SPECIFICATIONS

Amplifier section

European model:

DIN power output (Rated): 25 + 25 watts (6 ohms at 1 kHz, DIN, 230 V)
Continuous RMS power output (Reference): 30 + 30 watts (6 ohms at 1 kHz, 10% THD, 230 V)
Music power output (Reference): 50 + 50 watts

Other models:

DIN power output (Rated): 20 + 20 watts (6 ohms at 1 kHz, DIN, 240 V)
18 + 18 watts (6 ohms at 1 kHz, DIN, 220 V)
Continuous RMS power output (Reference): 25 + 25 watts (6 ohms at 1 kHz, 10% THD, 240 V)
23 + 23 watts (6 ohms at 1 kHz, 10% THD, 220 V)
Peak Music Power Output: 400 watts

Inputs
TAPE IN (phono jacks): voltage 250 mV, impedance 47 kilohms
DIGITAL OPTICAL IN
LINE IN (stereo minijack): voltage 250 mV, impedance 47 kilohms

Outputs
TAPE OUT (phono jacks): voltage 250 mV, impedance 1 kilohm
PHONES (stereo minijack): accepts headphones of 8 ohms or more.
SPEAKER: accepts impedance of 6 to 16 ohms.

CD player section

System: Compact disc and digital audio system
Laser: Semiconductor laser (λ=780 nm) Emission duration: continuous
Laser output: Max. 44.6 μW*
*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with a 7 mm aperture.
Frequency response: 2 Hz – 20 kHz

MD deck section

System: MiniDisc digital audio system
Laser: Semiconductor laser (λ=780 nm) Emission duration: continuous
Laser output: Max. 44.6 μW*
*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with a 7 mm aperture.
Sampling frequency: 44.1 kHz
Frequency response: 5 Hz – 20 kHz

Tuner section

FM stereo, FM/AM superheterodyne tuner

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range
Tourist model: 76.0 – 108.0 MHz
Other models: 87.5 – 108.0 MHz (50 kHz step)
Aerial: FM lead aerial
Aerial terminals: 75 ohms unbalanced
Intermediate frequency: 10.7 MHz

AM tuner section

Tuning range
European model: 531 – 1,602 kHz (with the interval set at 9 kHz)
Other models: 531 – 1,602 kHz (with the interval set at 9 kHz)
530 – 1,710 kHz (with the interval set at 10 kHz)
Aerial: AM loop aerial
External aerial terminals
Intermediate frequency: 450 kHz

— Continued on next page —

COMPACT DISC DECK RECEIVER

9-928-998-12
2001F0200-1

Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

General

Power requirements
European model: 230 V AC, 50/60 Hz
Other models: 110 – 120 V or 220 – 240 V AC, 50/60 Hz
Power consumption 70 watts during normal operation
Approx. 3 watts in standby mode (clock displayed)
Approx. 1 watt in standby mode (clock not displayed)
Dimensions (w/h/d) incl. projecting parts and controls
Amplifier/Tuner/MD/CD section: Approx. 215 × 150 × 330 mm
Speaker: Approx. 170 × 275 × 235 mm
Mass
Amplifier/Tuner/MD/CD section: Approx. 6.2 kg
Speakers: Approx. 3.5 kg net per speaker

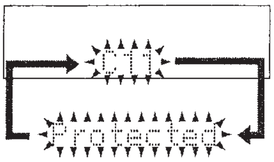
Design and specifications are subject to change without notice.

SELF-DIAGNOSIS FUNCTION

The self-diagnosis function consists of error codes for customers which are displayed automatically when errors occur, and error codes which show the error history in the test mode during servicing. For details on how to view error codes for the customer, refer to the following box in the instruction manual. For details on how to check error codes during servicing, refer to the following "Procedure for using the Self-Diagnosis Function (Error History Display Mode)".

Self-diagnosis Display

This system has a Self-diagnosis display function to let you know if there is a system malfunction. The display shows a code made up of three letters and a message alternately to show you the problem. To solve the problem refer to the following list. If any problem persists, consult your nearest Sony dealer.



C11/Protected
The MD is protected against erasure.
→Remove the MD and slide the tab to close the slot (page 25).

C12/Cannot Copy
You tried to record a CD or MD with a format that the system does not support, such as a CD-ROM.
→Remove the disc and turn off the system once, then turn it on again.

C13/REC Error
Recording could not be performed properly.
→Move the system to a stable place, and start recording over from the beginning.
The MD is dirty or scratched, or the MD does not meet the standards.
→Replace the MD and start recording over from the beginning.

C13/Read Error
The MD deck cannot read the disc information properly.
→Remove the MD once, then insert it again.

C14/Toc Error
The MD deck cannot read the disc information properly.
→Replace the MD.
→Erase all the recorded contents of the MD using the All Erase function on page 38.

C41/Cannot Copy
The sound source is a copy of a commercially available music software, or you tried to record a CD-R (Recordable CD).
→The Serial Copy Management System prevents making a digital copy (see page 55). You cannot record a CD-R.

C71/Check OPT-IN
This appears momentarily because of the signal of the digital broadcast during recording.
→There is no affect on the recorded contents.
No component is connected to the DIGITAL OPTICAL IN jack, or a digital component is not connected properly.
→Connect a digital component to the DIGITAL OPTICAL IN jack properly using a digital connecting cable (not supplied, see page 53).
The connected digital component is not turned on.
→See the operating instructions supplied with the connected component and confirm whether the component is turned on.
The digital connecting cable connected to the DIGITAL OPTICAL IN jack is pulled out, or the connected digital component is turned off during digital recording.
→Connect the cable, or turn on the digital component.

Procedure for using the Self-Diagnosis Function (Error History Display Mode).

Note: Perform the self-diagnosis function in the "error history display mode" in the test mode. The following describes the least required procedure. Be careful not to enter other modes by mistake. If you set other modes accidentally, press the [MENU/NO "R"] button to exit the mode.

1. When the power ON, press the [I/⏻] button while pressing the [■ (MD)] button and [● REC] button together.
2. Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button and when "[Service]" is displayed, press the [ENTER/YES "R"] button. (If nothing is displayed, press the [FUNCTION] button and set the function to "MD".)
3. Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button and display "ERR DP MODE".
4. Pressing the [ENTER/YES "R"] button sets the error history mode and displays "total rec".
5. Select the contents to be displayed or executed using the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button.
6. Pressing the [SYNC REC] button will display or execute the contents selected.
7. Pressing the [SYNC REC] button another time returns to step 4.
8. Pressing the [MENU/NO "R"] button displays "ERROR DP MODE" and exits the error history mode.
9. To exit the test mode, press the [REPEAT/STEREO/MONO] button. The unit sets into the STANDBY state, and the test mode ends.

Note 1: About "R"
As this unit has only a few buttons, some operations require the use of remote commander (RM-SJ373/provided with unit: 1-418-554-11) buttons. These operations are indicated as ["R"] in this manual.
Example: [MENU/NO "R"] ...Press the MENU/NO button of the remote commander.

Note 2:
Incorrect operations may be performed if the test mode is not set properly.
In this case, press the [RESET] button of the back panel.

ITEMS OF ERROR HISTORY MODE ITEMS AND CONTENTS

Selecting the Test Mode

Display	Details of History
total rec	Displays the recording time. Displayed as "r□□□□□□h". The displayed time is the total time the laser is set to the high power state. This is about 1/4 of the actual recording time. The time is displayed in decimal digits from 0h to 65535h.
total play	Displays the play time. Displayed as "p□□□□□□h". The time displayed is the total actual play time. Pauses are not counted. The time is displayed in decimal digits from 0h to 65535h.
retry err	Displays the total number of retries during recording and number of retry errors during play. Displayed as "r□□ p□□". "r" indicates the retries during recording while "p" indicates the retry errors during play. The number of retries and retry errors are displayed in hexadecimal digits from 00 to FF.
total err	Displays the total number of errors. Displayed as "total □□". The number of errors is displayed in hexadecimal digits from 00 to FF.
err history	Displays the 10 latest errors. Displayed as "0□ E@@". □ indicates the history number. The smaller the number, the more recent is the error. (00 is the latest). @@ indicates the error code. Refer to the following table for the details. The error history can be switched by pressing the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button.
er refresh	Mode which erases the "retry err", "total err", and "err history" histories. When returning the unit to the customer after completing repairs, perform this to erase the past error history, After pressing the [SYNC REC] button and "er refresh?" is displayed, press the [ENTER/YES "R"] button to erase the history. "Complete!" will be displayed momentarily. Be sure to check the following when this mode has been executed. • The data has been erased. • The mechanism operates normally when recording and play are performed.
tm refresh	Mode which erases the "total rec" and "total play" histories. These histories serve as approximate indications of when to replace the optical pickup. If the optical pickup has been replaced, perform this operation and erase the history. After pressing the [SYNC REC] button and "tm refresh?" is displayed, press the [ENTER/YES "R"] button to erase the history. "Complete!" will be displayed momentarily. Be sure to check the following when this mode has been executed. • The data has been erased. • The mechanism operates normally when recording and play are performed.

Table of Error Codes

Error Code	Details of Error	Error Code	Details of Error
E00	No error	E05	FOK has deviated
E01	Read error. PTOC cannot be read (DISC ejected)	E06	Cannot focus (Servo has deviated)
		E07	Recording retry
E02	TOC error. UTOC error (DISC not ejected)	E08	Recording retry error
		E09	Playback retry error (Access error)
E03	Loading error		
E04	Address cannot be read (Servo has deviated)	E0A	Play retry error (C2 error)

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.





This caution label is located inside the unit.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

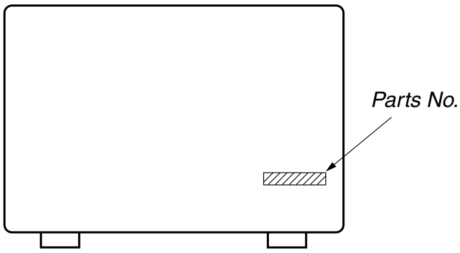
Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

MODEL IDENTIFICATION
— BACK PANEL —



PARTS No.	MODEL
4-221-082-1□	AEP, UK
4-221-082-3□	HK, SP, MY, AR, AUS, KR, JE
4-221-082-4□	CH

- Abbreviation

  HK : Hong Kong model
  SP : Singapore model
  MY : Malaysia model
  AR : Argentine model
  AUS : Australian model
  KR : Korea model
  CH : Chinese model
  JE : Tourist model

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

与安全有关的零部件须知

在原理图上用阴影及 ⚠ 标记来识别的零部件在安全操作上是具有关键性的。这些零部件要用本手册中所示的部件号对应的索尼零部件进行更换。

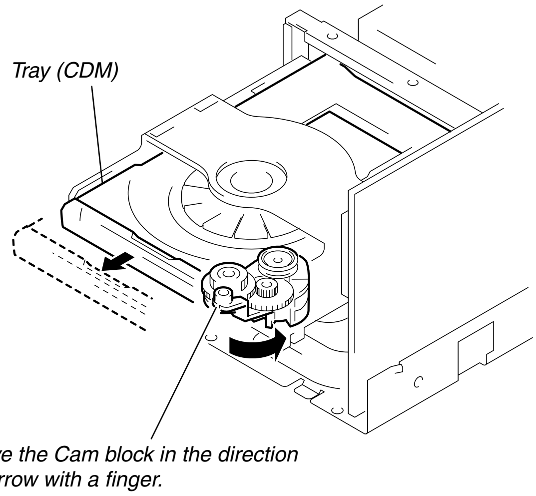
在安全操作上具有关键性的电路调整与索尼公司出版的维修手册完全一致。在更换关键零部件时或怀疑动作失常时，请进行这些调整操作。

TABLE OF CONTENTS

SECTION 1
SERVICING NOTE

Note 1: "R"
As this unit has only a few buttons, some operations require the use of remote commander (provided with RM-SJ373/unit: 1-418-554-11) buttons. These operations are indicated as "R" in this manual.
Example: MENU/NO "R" ...Press the MENU/NO button of the remote commander.

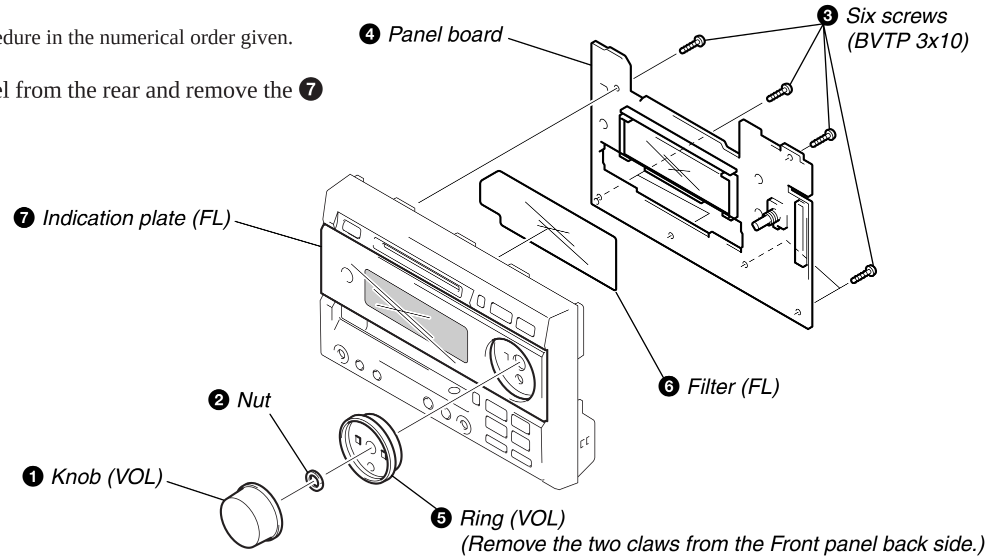
DRAWING OUT THE TRAY DURING POWER OFF



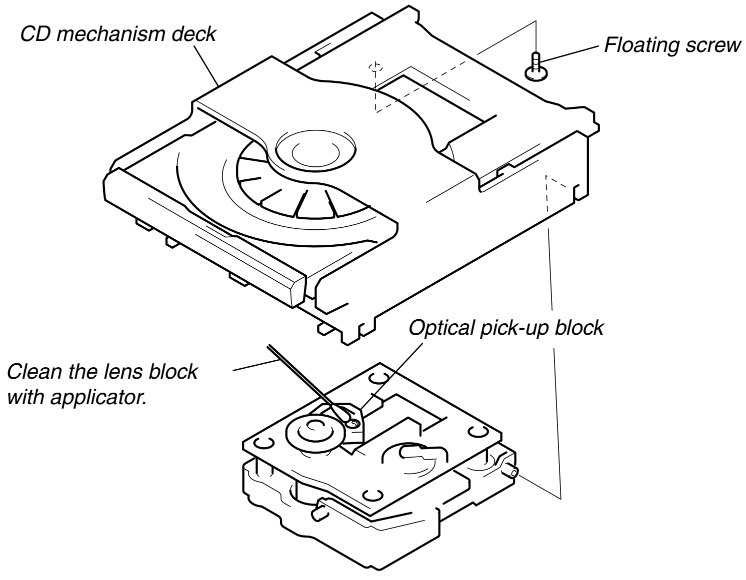
REMOVING THE INDICATION PLATE (FL)

Note: Follow the disassembly procedure in the numerical order given.

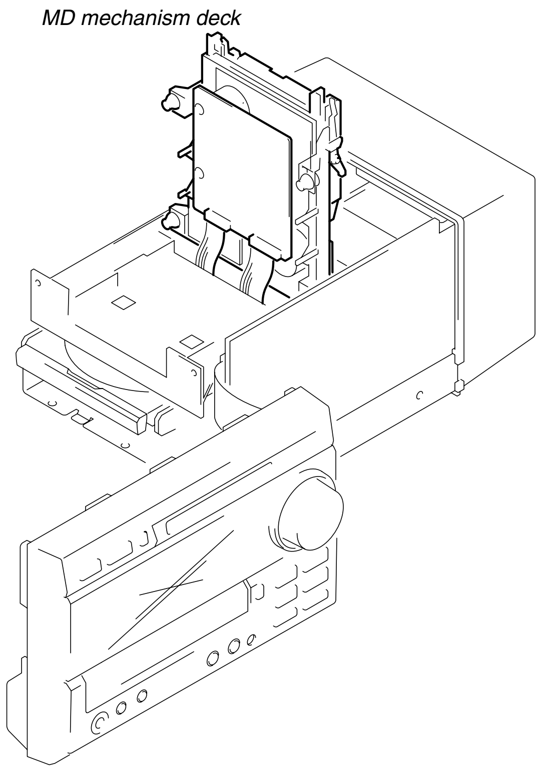
- Press the [shaded area] of the front panel from the rear and remove the ❼ indication plate (FL).



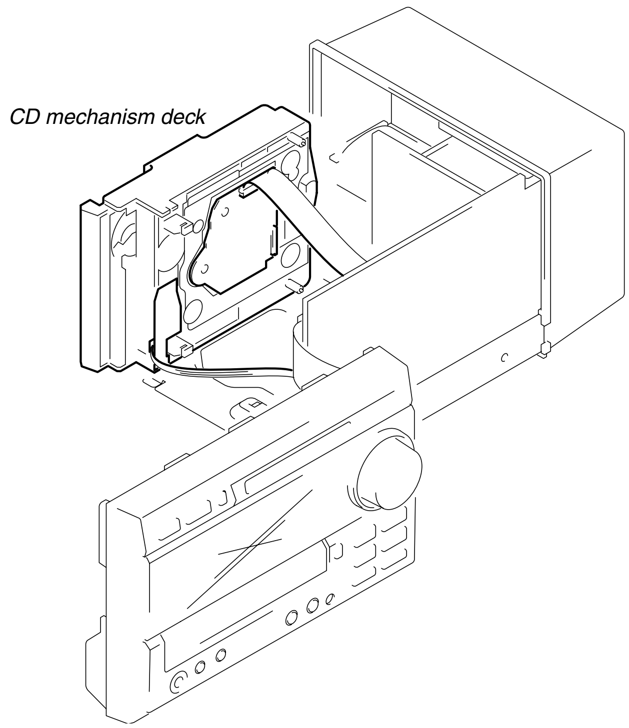
CLEANING THE OPTICAL PICKUP (CD PLAYER)



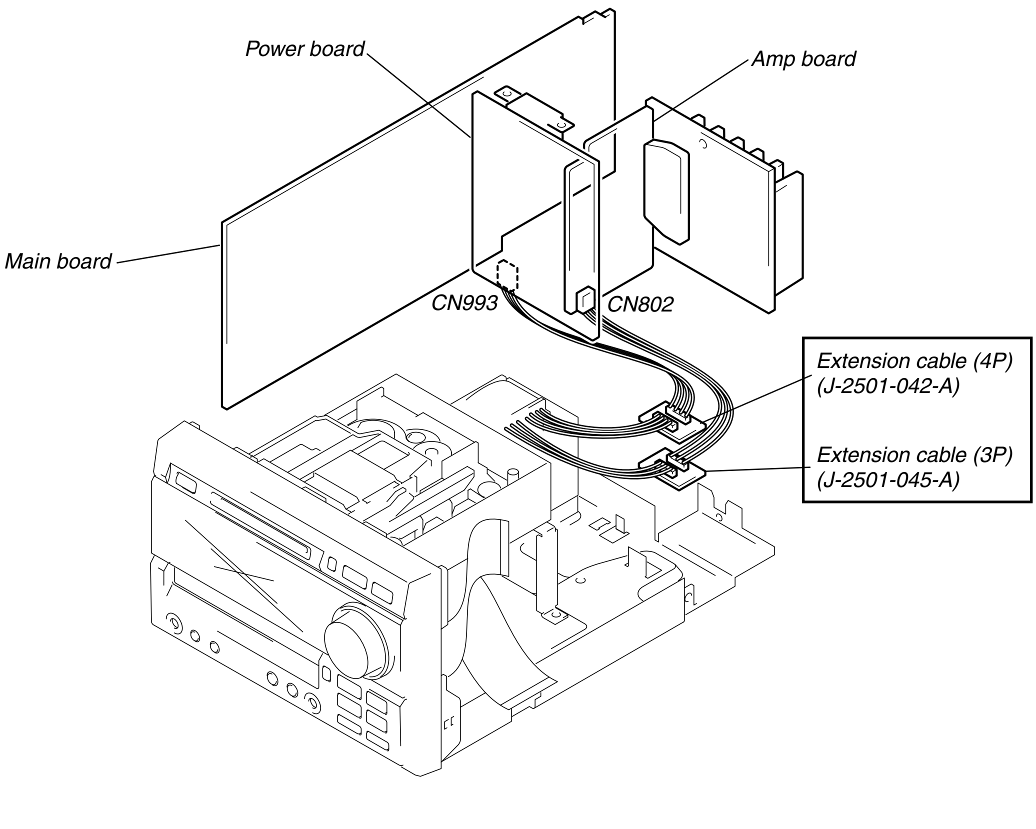
SERVICE POSITION THE MD MECHANISM



SERVICE POSITION THE CD MECHANISM



SERVICE POSITION THE POWER BOARD



Cold Reset

- The cold reset clears all data inculuding preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure 1: (recommended)
Press the RESET button on the back panel.
Procedure 2:
1. When the power ON, press the I/⏻ button while pressing the PLAY MODE/TUNING MODE button and ■ (CD) buttons together.
2. "COLD RESET" is displayed on the fluorescent indicator tube and reset is executed.

Hot Reset

- This mode reset the preset data kept in the memory. The hot reset mode functions same as if the power cord is plugged in and out.

Procedure :
1. When the power ON, press the I/⏻ button while pressing the PLAY MODE/TUNING MODE button and ▶II (CD) buttons together.
2. Turn off the unit and reset is executed.

LED and Fluorescent Indicator Tube All Lit, Key Check Mode

Procedure :
1. When the power ON, press the I/⏻ button while pressing the PLAY MODE/TUNING MODE button and ⏏ (CD) buttons together.
2. LEDs and fluorescent indicator tube are all turned on.
3. Press ▶II (MD) button to turn set on.
4. In the key check mode, the fluorescent indicator tube displays "Key 0 Vol 0". Each time a button is pressed, "Key" value increases. However, once a button is pressed, it is no longer taken into account.
   "Vol" Value increases like "1, 2, 3 ..." if rotating VOLUME knob in the clockwise direction, or decreases like "0, 9, 8 ..." if rotating in the counterclockwise diretion.
5. To exit from this mode, press three buttons in the same procedure as step 1, or disconnect the power cord.

Note:
Press the ⏮◀◀/MD/CD/TUNING– button or ▶▶⏭/MD/CD/TUNING+ button for more than 1 second.

Change-over of AM tuner Step between 9kHz and 10kHz.

- A step of AM channels can be changed over between 9kHz and 10kHz.

1. Press I/⏻ button to turn set on.
2. Select the function "TUNER", and press TUNER/BAND button to select the BAND "AM".
3. Press I/⏻ button to turn on the set OFF.
4. When the power OFF, press I/⏻ button while pressing the PLAY MODE/TUNING MODE button.
   The display of fluorescent indicator tube changes to "AM 9k STEP" or "AM 10k STEP", and thus the channel step is changed over.

CD Text Display

- This unit displays CD text.
  Text is displayed for the first 50 track only and will not be displayed from the 51st track onwards. Do not suspect a fault in this case.
  In some cases, some special characters will not be displayed and may be replaced by other characters. Donot suspect a fault in this case.

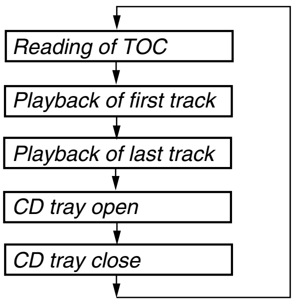
Aging Mode

• Mode for repeating operations of the CD player automatically.

When errors occur:
Aging stops and a message indicating that an error has occurred such as “CD MEC ERR” is displayed.
(For details of errors, refer to “Error History Display Mode”.)

When no errors occur:
Aging is repeatedly performed.

Procedure:
1. Load any CD.
2. Press the [FUNCTION] button and set the function to CD.
3. While pressing the [PLAY MODE/TUNING MODE] button and [▶II (MD)] button, press the [I/⏻] button.
4. “AGING” is displayed on the fluorescent display tube briefly.
5. When the aging mode is set, the CD mark and MD mark on the fluorescent tube blink.
6. Pressing the [▶II (CD)] button starts aging. Operations are performed in the following sequence during aging.



7. To end aging, while pressing the [PLAY MODE/TUNING MODE] button and [▶II (CD)] button, press the [I/⏻] button.
   (Hot reset is executed.)

Error History Display Mode

Mode for checking the history of errors which have occurred in the CD player.
Execute this mode after ending the aging mode.

Procedure:
1. Press the [FUNCTION] button, and set the function to “CD”.
2. While pressing the [■ (MD)] button and [▶▶ ▶▶I/MD/CD/TUNING+] button, press the [I/⏻] button.
3. “EMC@@EDC**” id displayed.
   @@ : Number of mechanism errors (Past 3 errors)
   ** : Number of errors (NO DISC ERROR) which occurred after chucking (Past 3 errors)

4. To check the history of mechanism errors, press the [PLAY MODE/TUNING MODE] button, and to check BD errors, press the [REPEAT/STEREO/MONO] button, and switch the display.
5. To end, press the [I/⏻] button and turn OFF the power.
6. To erase the error history, perform COLD reset.
   (While pressing the [PLAY MODE/TUNING MODE] button and [■ (CD)] button, press the [I/⏻] button.)

• Reading the Mechanism Error History Display
(To switch the history, press the PLAY MODE/TUNING MODE button.)

Display
E@@M**#*$*

@@: Error number. 00 is the latest
*: Invalid
#: Load in operations related
  D: Operations stopped due to problems other than mechanism related during CLOSE
  E: Operations stopped due to problems other than mechanism related during OPEN
  C: Operations stopped due to problems other than mechanism related during chucking up
$: Load out operations related
  1: Operations stopped during chucking up
  2: Operations stopped during chucking down

• Reading the BD Error History Display
(To switch the history, press the REPEAT/STEREO/MONO button.)

Display
E@@D##SS%*

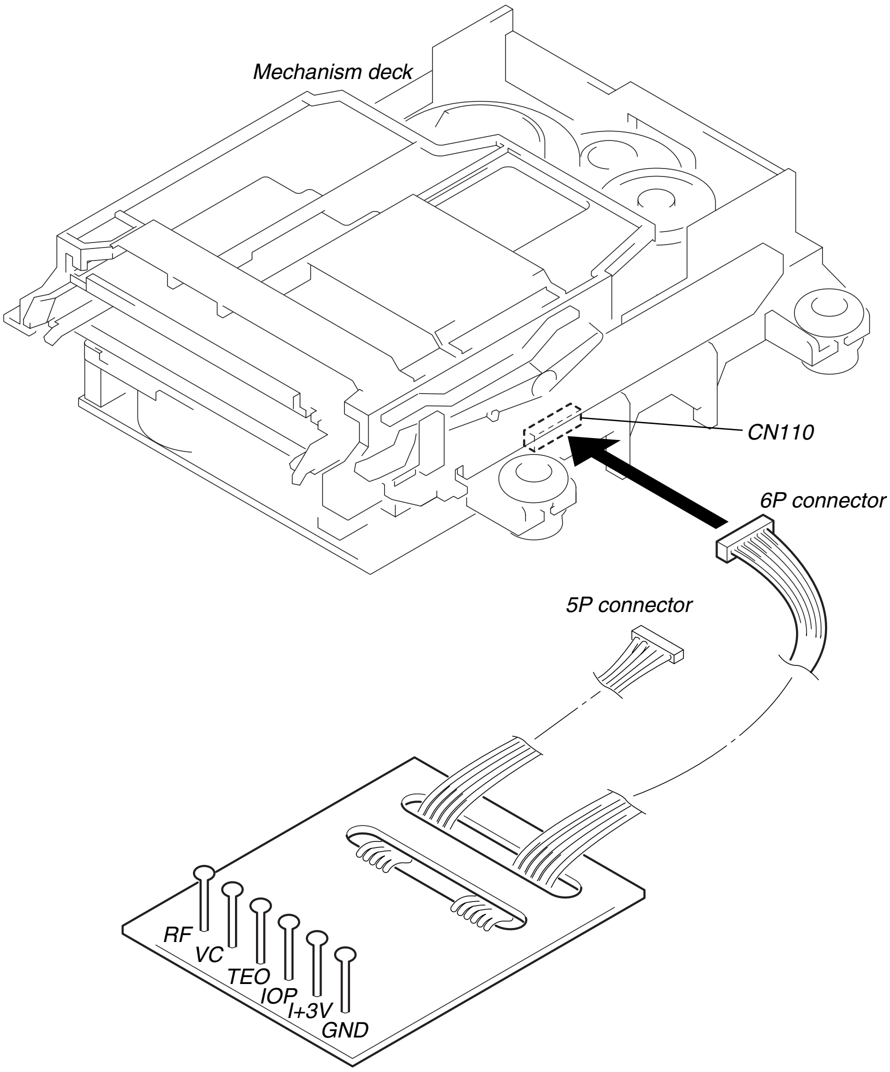
@@: Error number. 00 is the latest
##: Error details
  01: Focus error
  02: GFS error
  03: Setup error
$$: Retry performed/not performed
  00: Determined as NO DISC without chucking retry
  02: Determined as NO DISC after chucking retry

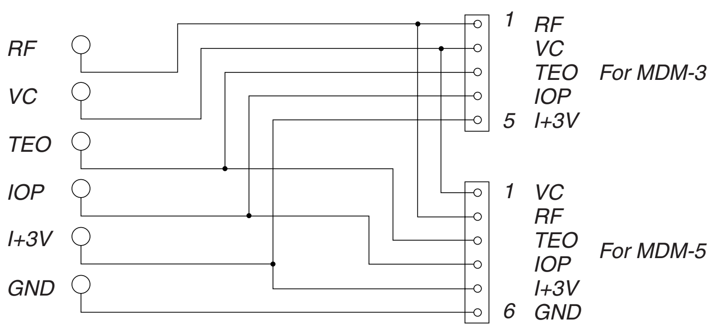
%: State when determined as NO DISC
  1: When stopped
  2: During setup
  3: During TOC READ
  4: During access
  5: During playback
  6: During PAUSE
  7: During manual search (during playback)
  8: During manual search (during Pause)
*: Invalid

JIG FOR CHECKING BD (MD) BOARD WAVEFORM

The special jig (J-2501-149-A) is useful for checking the waveform of the BD (MD) board. The names of terminals and the checking items to be performed are shown as follows.

GND : Ground
I+3V : For measuring IOP (Check the deterioration of the optical pick-up laser)
IOP : For measuring IOP (Check the deterioration of the optical pick-up laser)
TEO : TRK error signal (Traverse adjustment)
VC : Reference level for checking the signal
RF : RF signal (Check jitter)





IOP DATA RECORDING AND DISPLAY WHEN OPTICAL PICK-UP AND NON-VOLATILE MEMORY (IC171 OF BD (MD) BOARD) ARE REPLACED

The IOP value labeled on the optical pick-up can be recorded in the non-volatile memory. By recording the value, it will eliminate the need to look at the value on the label of the optical pick-up. When replacing the optical pick-up or non-volatile memory (IC171 of BD (MD) board), record the IOP value on the optical pick-up according to the following procedure.

Record Precedure:

1. When the power ON, press the [I/⏻] button while pressing the [■ (MD)] button and [● (REC)] button together.
2. Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button to display "[Service]", and press the [ENTER/YES "R"] button.
3. Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button to display " lop. Write", and press the [ENTER/YES "R"] button.
4. The display becomes "Ref=@@@.@" (@ is an arbitrary number) and the numbers which can be changed will blink.
5. Input the IOP value written on the optical pick-up.
   To select the number : Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button.
   To select the digit : Press the [SYNC REC] button.
6. When the [ENTER/YES "R"] button is pressed, the display becomes "Measu=@@@.@" (@ is an arbitrary number).
7. As the adjustment results are recorded for the 6 value. Leave it as it is and press the [ENTER/YES "R"] button.
8. "Complete!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become "Iop Write".
9. Press the [REPEAT STEREO/MONO] button to complete. "Standby" will be displayed.

Display Precedure:

1. When the power ON, press the [I/⏻] button while pressing the [■ (MD)] button and [● (REC)] button together.
2. Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button to display "[Service]", and press the [ENTER/YES "R"] button.
3. Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button to display "lop.Read".
4. "@@.@/##.#" is displayed and the recorded contents are displayed.
   @@.@ : indicates the Iop value labeled on the pick-up.
   ##.# : indicates the Iop value after adjustment
5. To end, press the [SYNC REC] button or [MENU/NO "R"] button to display "Iop Read". Then press the [REPEAT STEREO/MONO] button to display "Standby".

CHECKS PRIOR TO PARTS REPLACEMENT AND ADJUSTMENTS

Before performing repairs, perform the following checks to determine the faulty locations up to a certain extent.
Details of the procedures are described in "5 Electrical Adjustments".

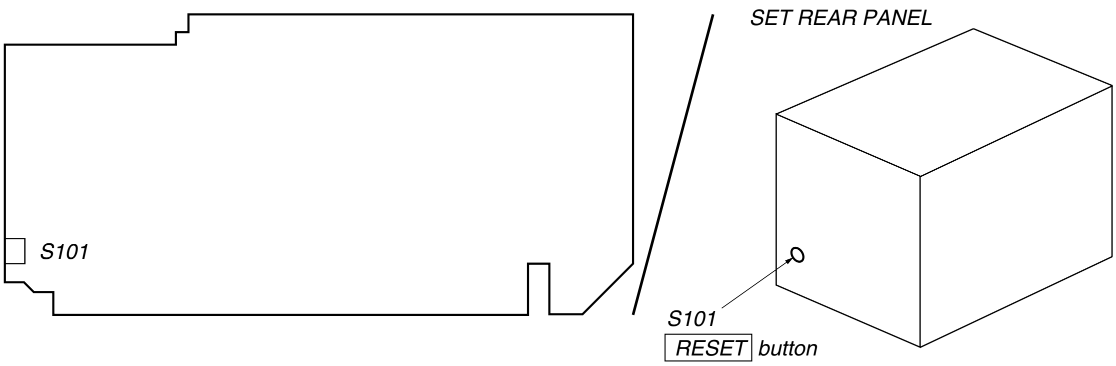
	Criteria for Determination (Unsatisfactory if specified value is not satisfied)	Measure if unsatisfactory:
Laser power check (5-6-2 : See page 33)	• 0.9 mW power Specified value : 0.84 to 0.92 mW • 7.0 mW power Specified value : 6.8 to 7.2 mW	• Clean the optical pick-up • Adjust again • Replace the optical pick-up
	lop (at 7mW) • Labeled on the optical pickup Iop value ± 10mA	• Replace the optical pick-up
Traverse check (5-6-3 : See page 33)	• Traverse waveform Specified value : Below 10% offset	• Replace the optical pick-up
Focus bias check (5-6-4 : See page 34)	• Error rate check Specified value : For points a, b, and c C1 error : Below 220 AD error : Below 2	• Replace the optical pick-up
C PLAY check (5-6-5 : See page 34)	• Error rate check Specified value: a. When using test disc (MDW-74/AU-1) C1 error : Below 80 AD error : Below 2 b. When using check disc (TDYS-1) C1 error : Below 50	• Replace the optical pick-up
Self-recording/playback check (REC/PLAY) (5-6-6 : See page 34)	• CPLAY error rate check Specified value: C1 error : Below 80 AD error : Below 2	If always unsatisfactory: • Replace the overwrite head • Check for disconnection of the circuits around the overwrite head
		If occasionally unsatisfactory: • Check if the overwrite head is distorted • Check the mechanism around the sled
TEMP check (Temperature compensation offset check) (5-6-1 : See page 33)	• Unsatisfactory if displayed as T=@@ (##) [NG]" NG (@@, ## are both arbitrary numbers)	• Check for disconnection of the circuits around D101 (BD board) • Check the signals around IC101, IC121, CN102, CN103 (BD board)

Note:
The criteria for determination above is intended merely to determine if satisfactory or not, and does not serve as the specified value for adjustments.
When performing adjustments, use the specified values for adjustments.

FORCED RESET

The system microprocessor can be reset in the following procedure.
Use these procedure when the unit cannot be operated normally due to the overrunning of the microprocessor, etc.
Procedure :
Press the S101 (RESET button of the back panel) on the MAIN board.

[MAIN BOARD] (Component Side)



RETRY CAUSE DISPLAY MODE

- In this test mode, the causes for retry of the unit during recording can be displayed on the fluorescent indicator tube. During playback, the "track mode" for obtaining track information will be set.
  This is useful for locating the faulty part of the unit.
- The following will be displayed :
  During recording and stop : Retry cause, number of retries, and number of retry errors.
  During playback : Information such as type of disc played, part played, copyright.
  These are displayed in hexadecimal.

Precedure:

1. Load a recordable disc whose contents can be erased into the unit.
2. Press the MENU/NO "R" button. When "Edit/Menu" is displayed on the fluorescent indicator tube, press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button to display "All Erase?".
3. Press the ENTER/YES "R" button.
4. When "All Erase??" is displayed on the fluorescent indicator tube, the music calendar number blinks.
5. Press the ENTER/YES "R" button to display "Complete!!", and press the ■ (MD) button immediately. Wait for about 10 seconds while pressing the button.
6. When the "TOC" displayed on the fluorescent display tube goes off, release the ■ (MD) button.
7. Press the ● REC button to start recording. Then press the ▶II (MD) button and start recording. If recording cannot be performed, press the FUNCTION button and set a different section.
8. To check the "track mode", press the ▶II (MD) button to start play.
9. To exit the test mode, press the I/⏻ button, and turn OFF the power. When "TOC" disappears, disconnect the power plug from the outlet. If the test mode cannot be exited, refer to "Forced Reset" on page 8.

Fig. 1 Reading the Test Mode Display (During recording and stop)

RTs@@c##c**

Fluorescent display tube display

@@ : Cause of retry
: Number of retries
** : Number of retry errors

Fig. 2 Reading the Test Mode Display (During playback)

@@####**$$

Fluorescent display tube display

@@ : Parts No. (name of area named on TOC)
: Cluster } Address (Physical address on disc)
** : Sector } Address (Physical address on disc)
$$: Track mode (Track information such as copyright information of each part)

Reading the Retry Cause Display

	Higher Bits				Lower Bits				Hexa-decimal	Cause of Retry	Occurring conditions
Hexadecimal	8	4	2	1	8	4	2	1			
Bit	b7	b6	b5	b4	b3	b2	b1	b0			
Binary	0	0	0	0	0	0	0	1	01	shock	When track jump (shock) is detected
	0	0	0	0	0	0	1	0	02	ader5	When ADER was counted more than five times continuously
	0	0	0	0	0	1	0	0	04	Discontinuous address	When ADIP address is not continuous
	0	0	0	0	1	0	0	0	08	DIN unlock	When DIN unlock is detected
	0	0	0	1	0	0	0	0	10	FCS incorrect	When not in focus
	0	0	1	0	0	0	0	0	20	IVR rec error	When ABCD signal level exceeds the specified range
	0	1	0	0	0	0	0	0	40	CLV unlock	When CLV is unlocked
	1	0	0	0	0	0	0	0	80	Access fault	When access operation is not performed normally

Reading the Display:
Convert the hexadecimal display into binary display. If more than two causes, they will be added.

Example

When 42 is displayed:
Higher bit : 4 = 0100 → b6
Lower bit : 2 = 0010 → b1
In this case, the retry cause is combined of "CLV unlock" and "ader5".

When A2 is displayed:
Higher bit : A = 1010 → b7+b5
Lower bit : 2 = 0010 → b2
The retry cause in this case is combined of "access fault", "IVR rec error", and "ader5".

Reading the Track Mode Display

	Higher Bits				Lower Bits				Hexa-decimal	Details	
Hexadecimal	8	4	2	1	8	4	2	1			
Bit	b7	b6	b5	b4	b3	b2	b1	b0		When 0	When 1
Binary	0	0	0	0	0	0	0	1	01	Emphasis OFF	Emphasis ON
	0	0	0	0	0	0	1	0	02	Monaural	Stereo
	0	0	0	0	0	1	0	0	04	This is 2-bit display. Normally 01.	
	0	0	0	0	1	0	0	0	08	01:Normal audio. Others:Invalid	
	0	0	0	1	0	0	0	0	10	Audio (Normal)	Invalid
	0	0	1	0	0	0	0	0	20	Original	Digital copy
	0	1	0	0	0	0	0	0	40	Copyright	No copyright
	1	0	0	0	0	0	0	0	80	Write prohibited	Write allowed

Reading the Display:
Convert the hexadecimal display into binary display. If more than two causes, they will be added.

Example When 84 is displayed:
Higher bit : 8 = 1000 ⟶ b7
Lower bit : 4 = 0100 ⟶ b2
In this case, as b2 and b7 are 1 and others are 0, it can be determined that the retry cause is combined of "emphasis OFF", "monaural", "original", "copyright exists", and "write allowed".

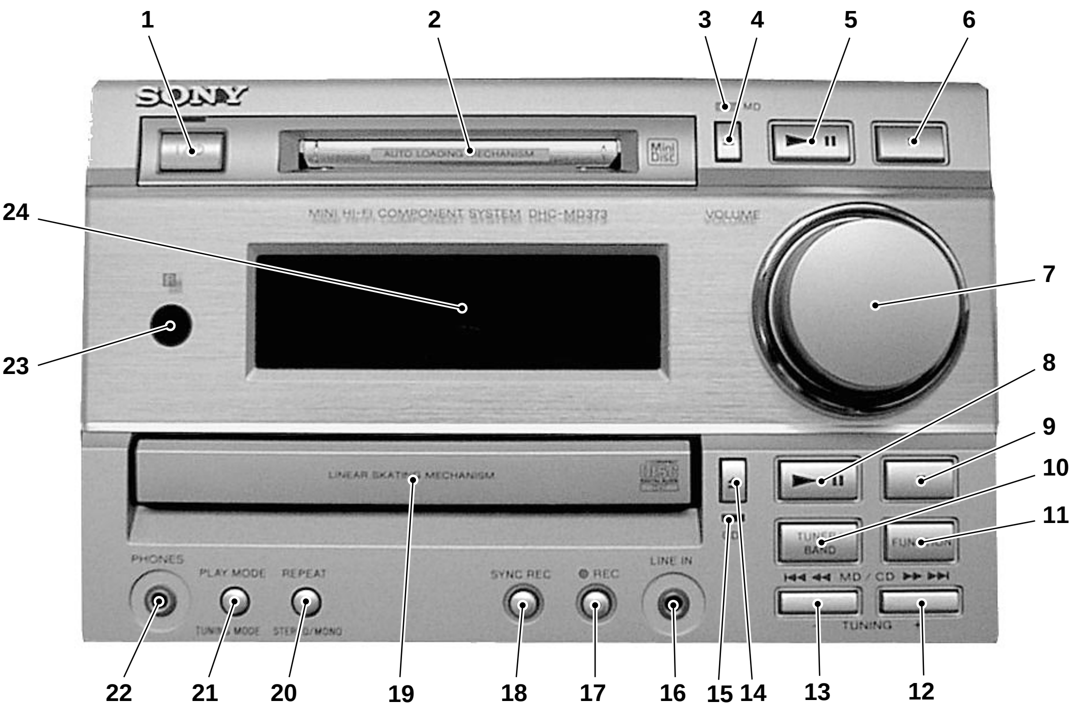
Example When 07 is displayed:
Higher bit : 0 = 1000 ⟶ All 0
Lower bit : 7 = 0111 ⟶ b0+b1+b2
In this case, as b0, b1, and b2 are 1 and others are 0, it can be determined that the retry cause is combined of "emphasis ON", "stereo", "original", "copyright exists", and "write prohibited".

Hexadecimal ⟶ Binary Conversion Table

Hexadecimal	Binary	Hexadecimal	Binary
0	0000	8	1000
1	0001	9	1001
2	0010	A	1010
3	0011	B	1011
4	0100	C	1100
5	0101	D	1101
6	0110	E	1110
7	0111	F	1111

SECTION 2
GENERAL

Front Panel



LOCATION OF PARTS AND CONTROLS

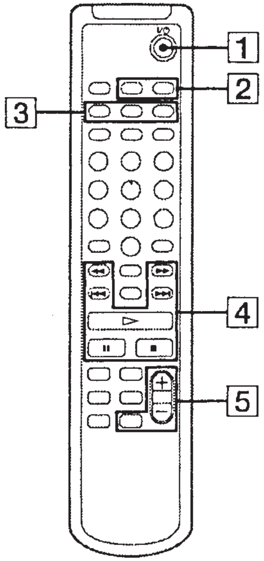
1 I/⏻ (power) switch
2 MD slot
3 ⏏ (Eject) (MD) button
4 MD indicator
5 ►II (MD) button
6 ■ (MD) button
7 VOLUME (CD) knob
8 ►II (CD) button
9 ■ (CD) button
10 TUNER/BAND button
11 FUNCTION button
12 MD/CD |◄◄ ◄◄/►► ►►| + button
13 MD/CD |◄◄ ◄◄/►► ►►| – button
14 CD indicator
15 ⏏ (CD) button
16 LINE IN jack
17 ● REC button
18 CD/MD SYNC button
19 Disc tray
20 REPEAT, STEREO/MONO button
21 PLAY MODE/TUNING MODE button
22 PHONES jack
23 Remote sensor
24 Display window

Parts descriptions for the remote

You can use the supplied remote to control the system.

Note

You cannot perform the following operations with the remote;
— TUNING MODE setting for the tuner
— STEREO/MONO setting for the tuner
— Removing discs
— Recording on the MD
— One Touch Play



1 **I/⏻ (power) switch**

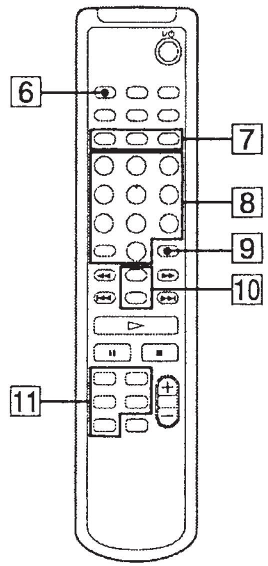
2 **CLOCK/TIMER SELECT button**
Press to check timer settings, or to set the timer on/off. (pages 49 and 51)
CLOCK/TIMER SET button
Press to set the clock and timer functions.

Parts descriptions for the remote (continued)

3 **PLAY MODE button**
Press to select normal play, Shuffle Play or Programme Play.
REPEAT button
Press to play a track or all the tracks repeatedly
MUSIC MENU button
Press to select the type of the preset equalizer.

4 **CURSOR←/→, ◀◀/▶▶ buttons**
Press to label a CD, MD and preset station, or to set the clock.
⏮/⏭ (AMS: Automatic Music Sensor) buttons
▷ (play) button
II (pause) button
■ (stop) button

5 **VOLUME +/– buttons**
Press to adjust the volume.
DBFB button
Press to reinforce the bass sound.



6 **SLEEP button**
Press to set Sleep Timer.

7 **MENU/NO button**
Press to set Programme Play, or to label a CD, MD and preset station.
NAME EDIT, CHARACTER button
Press to display the text input screen and to select the type of characters to be input.
ENTER/YES button
Press to set the clock, Programme Play and to label a CD, MD and preset station, or to enter the settings in "Edit Menu" or "Setup Menu".

8 **Number buttons**
Press to select track numbers of a CD, MD, or preset station.

9 **CLEAR button**
Press to cancel the selection.

10 **SCROLL button**
Press to display the disc title or track title scrolling.
DISPLAY button
Press to show the various information.

11 **The sound source buttons**
MD button
CD button
FUNCTION button
Press to switch the sound source.
Each time you press this button, the sound source changes as follows;

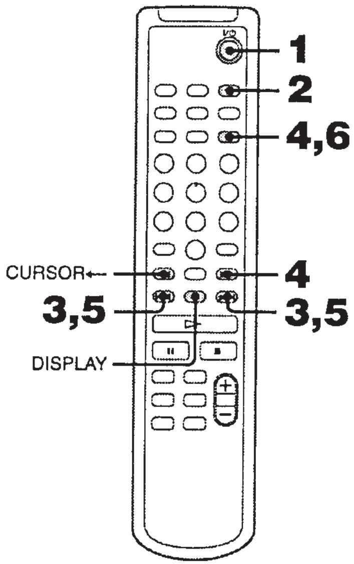
→ CD → TUNER → OPTICAL IN → LINE IN → MD → TAPE → (back to CD)

BAND, TUNER button
Press to select the tuner for the sound source, or to select the FM or AM band.
TAPE button

This section is extracted from instruction manual.

Step 2: Setting the time

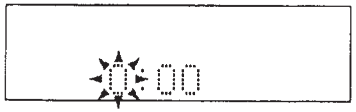
You must set the time beforehand to use the timer functions.
The clock is on a 24-hour system for the European model, and a 12-hour system for other models.
The 24-hour system is used for illustration purposes.



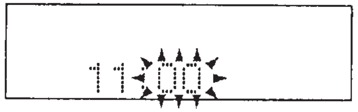
1 Turn on the system.

2 Press CLOCK/TIMER SET.
The clock appears and the hour indication flashes.

3 Press |◀◀ or ▶▶| to set the hour.



4 Press ENTER/YES or CURSOR→.
The minute indication flashes.



5 Press |◀◀ or ▶▶| to set the minute.

6 Press ENTER/YES.
The clock starts.

If you make a mistake

Press CURSOR← or → repeatedly until the incorrect item flashes, then set it again.

To change the preset time

You can change the preset time while the system is off.

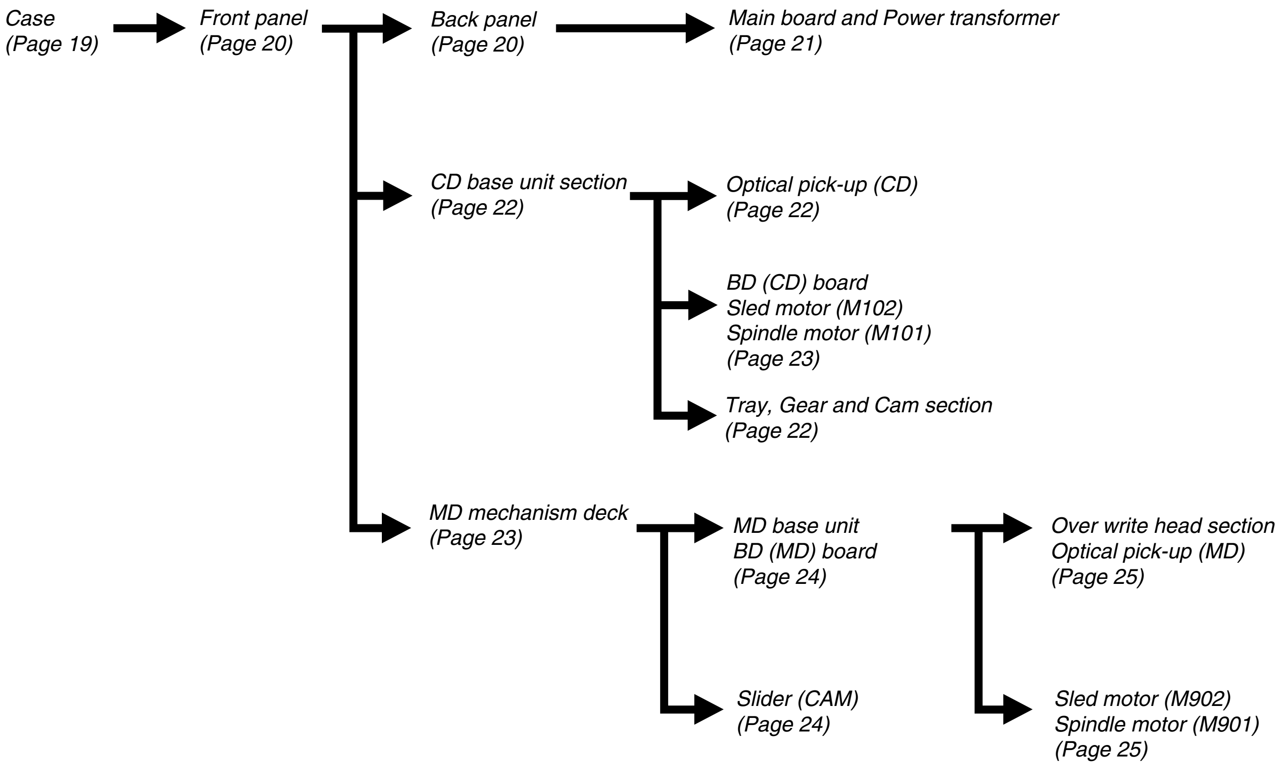
1 Press DISPLAY to display the clock.
2 Press CLOCK/TIMER SET.
3 Repeat steps 3 to 6 of "Setting the time".

Tip

The upper dot of the colon flashes for the first 30 seconds, and the lower dot flashes for the last 30 seconds of each minute.

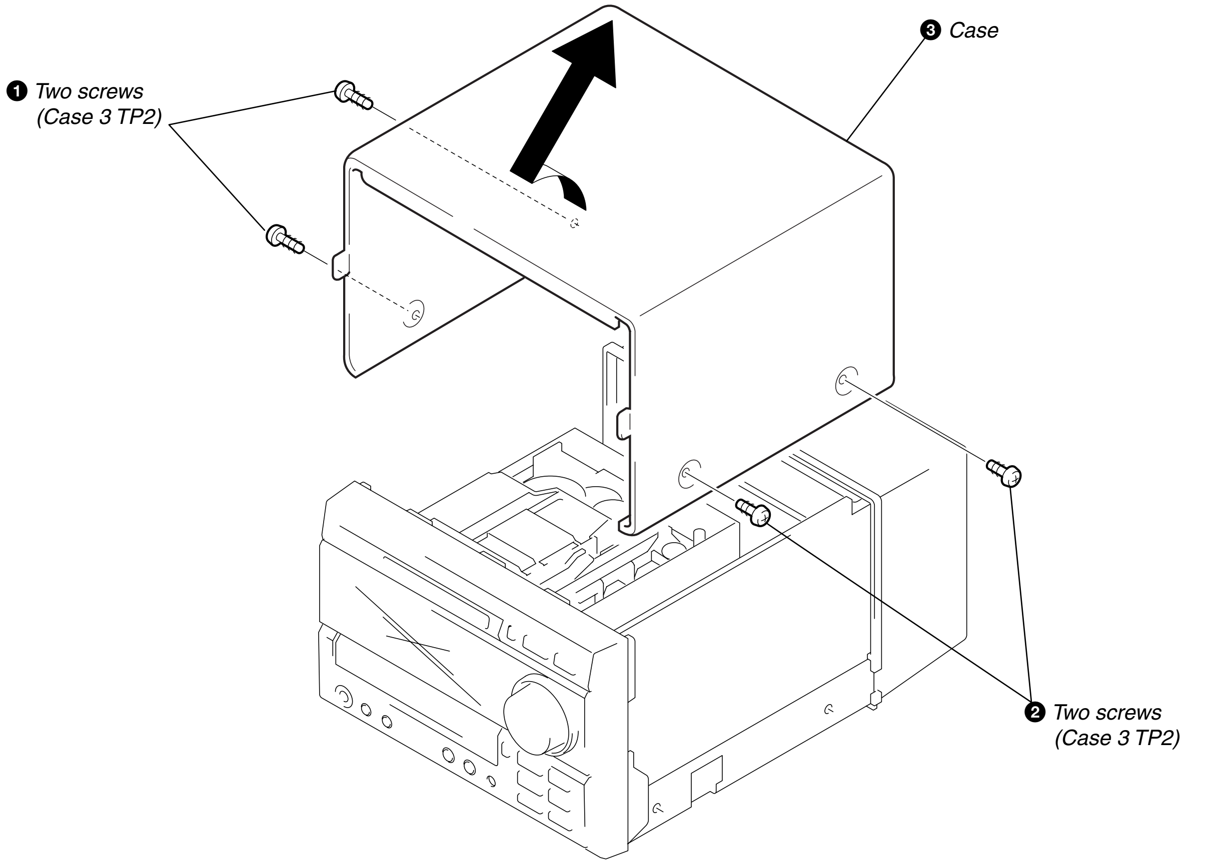
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

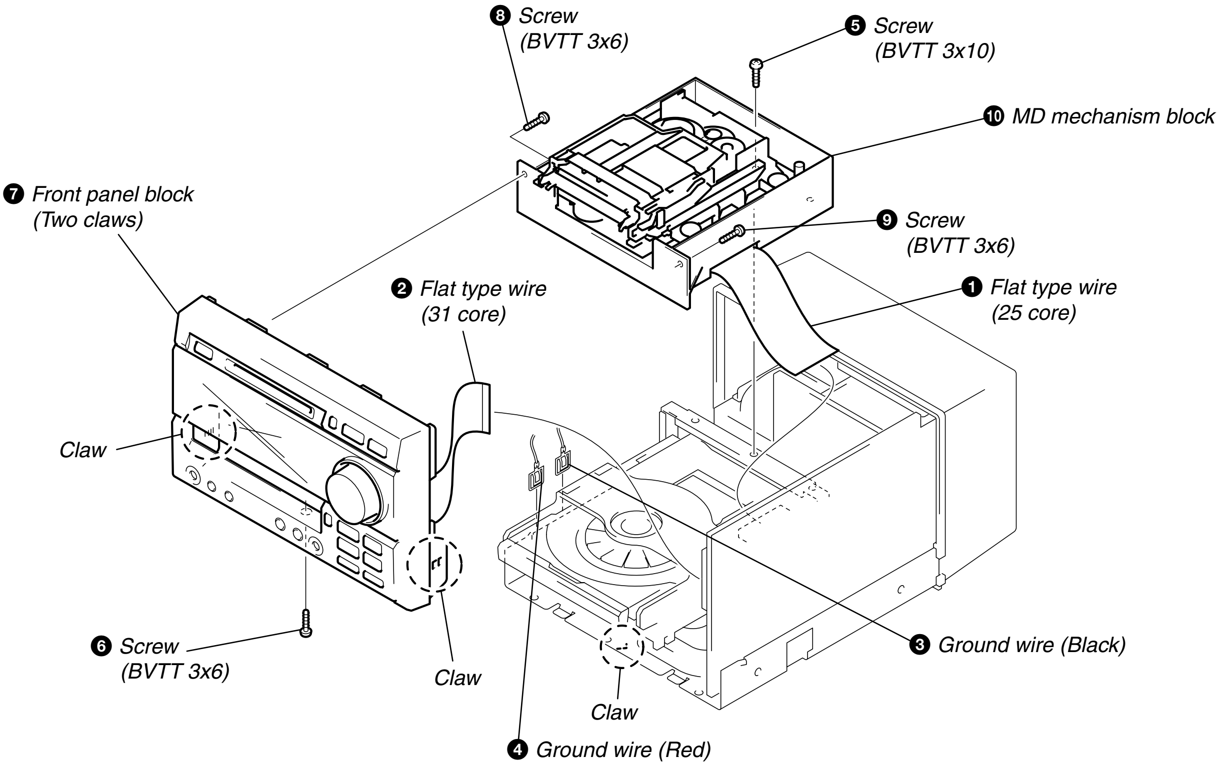


Note: Follow the disassembly procedure in the numerical order given.

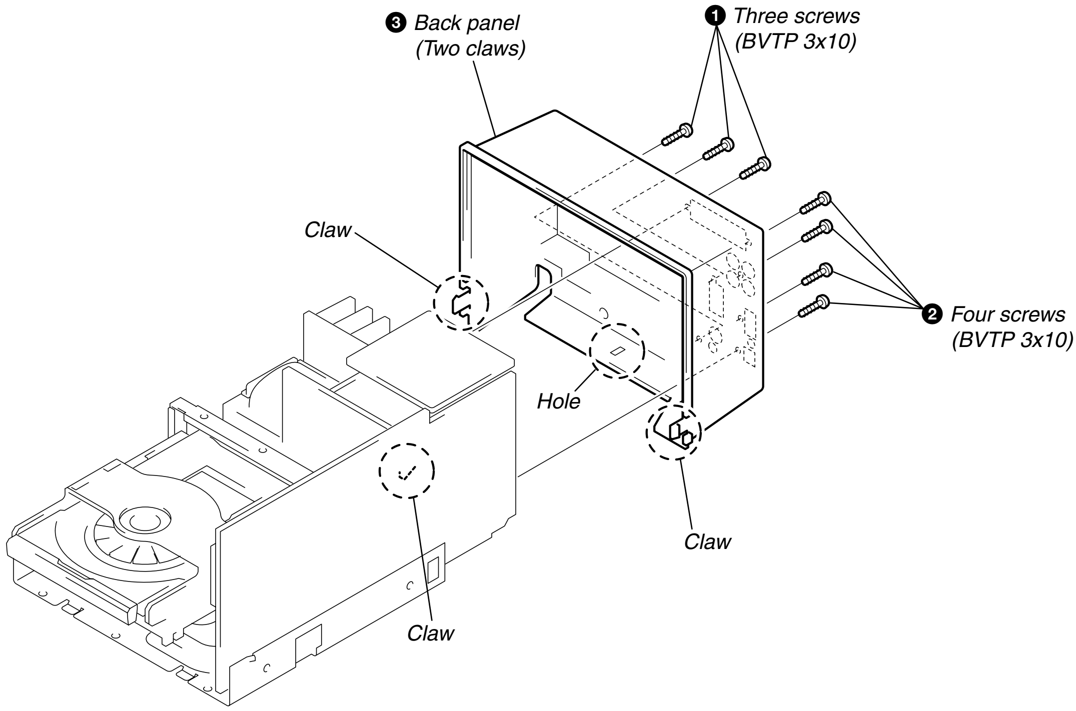
3-1. CASE



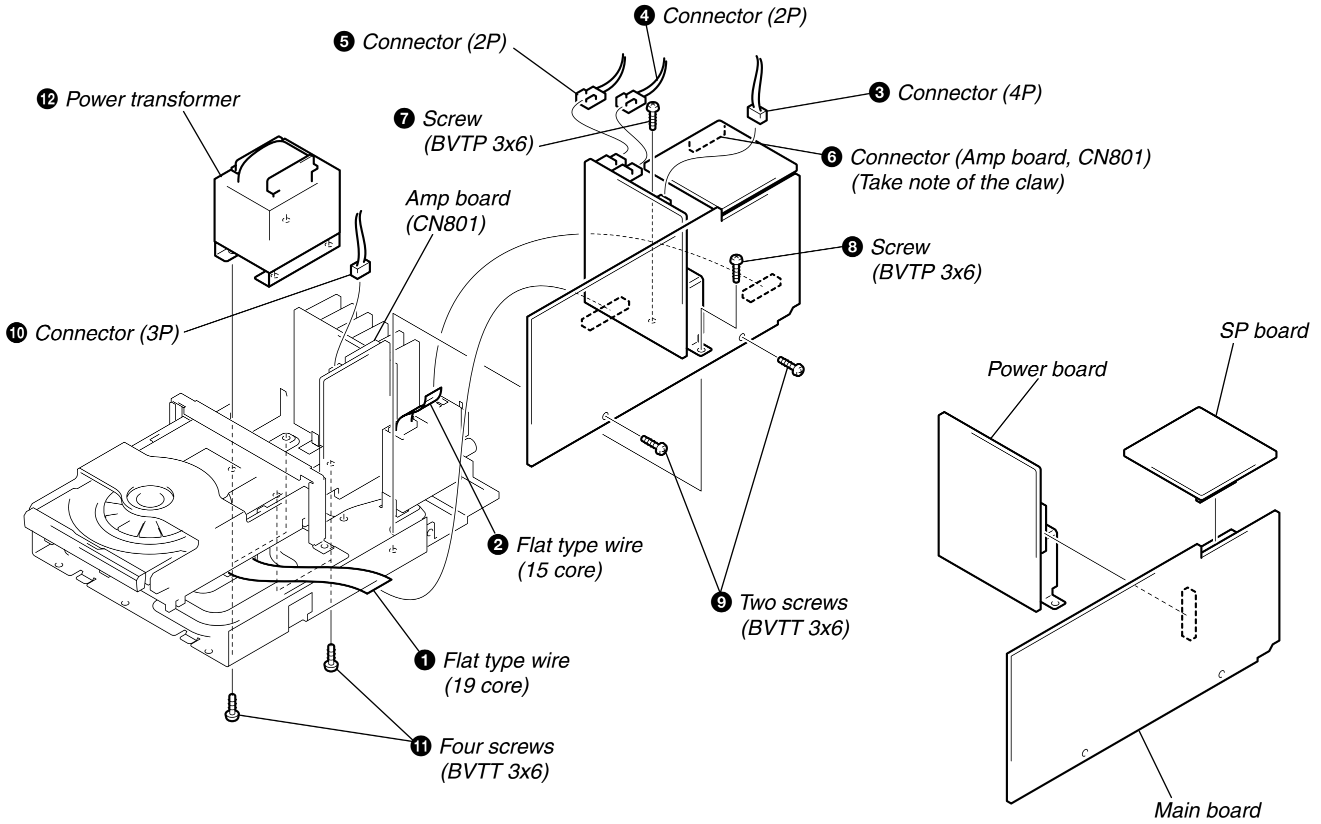
3-2. FRONT PANEL



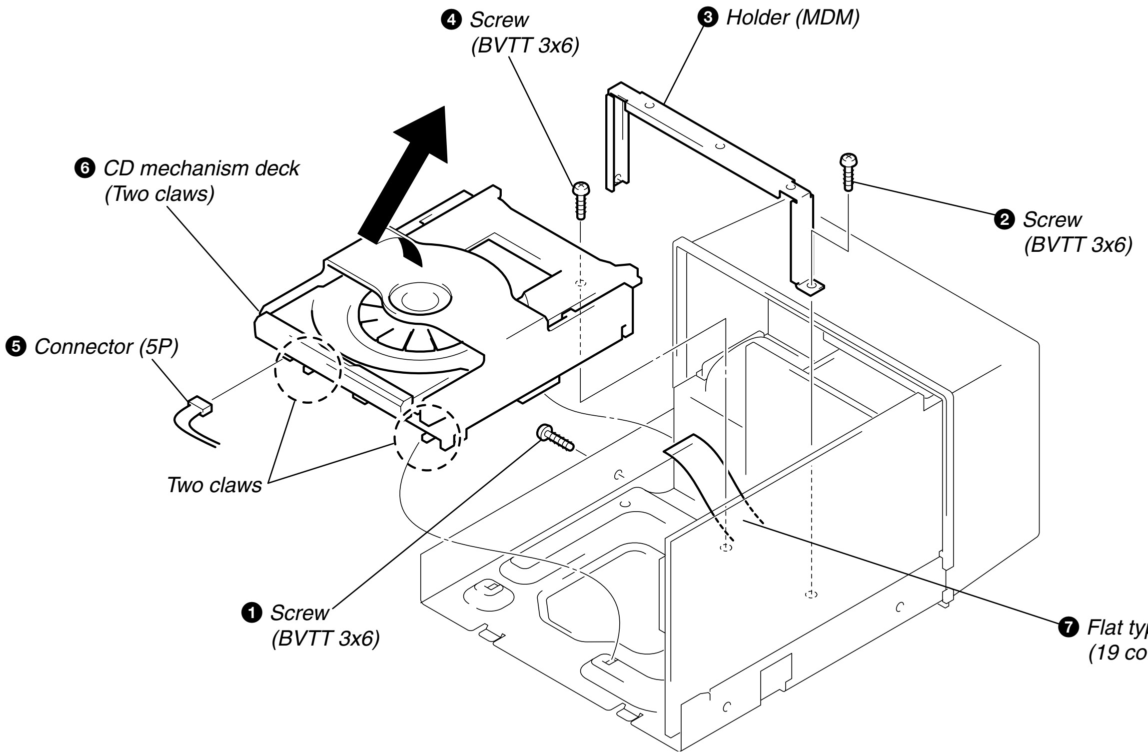
3-3. BACK PANEL



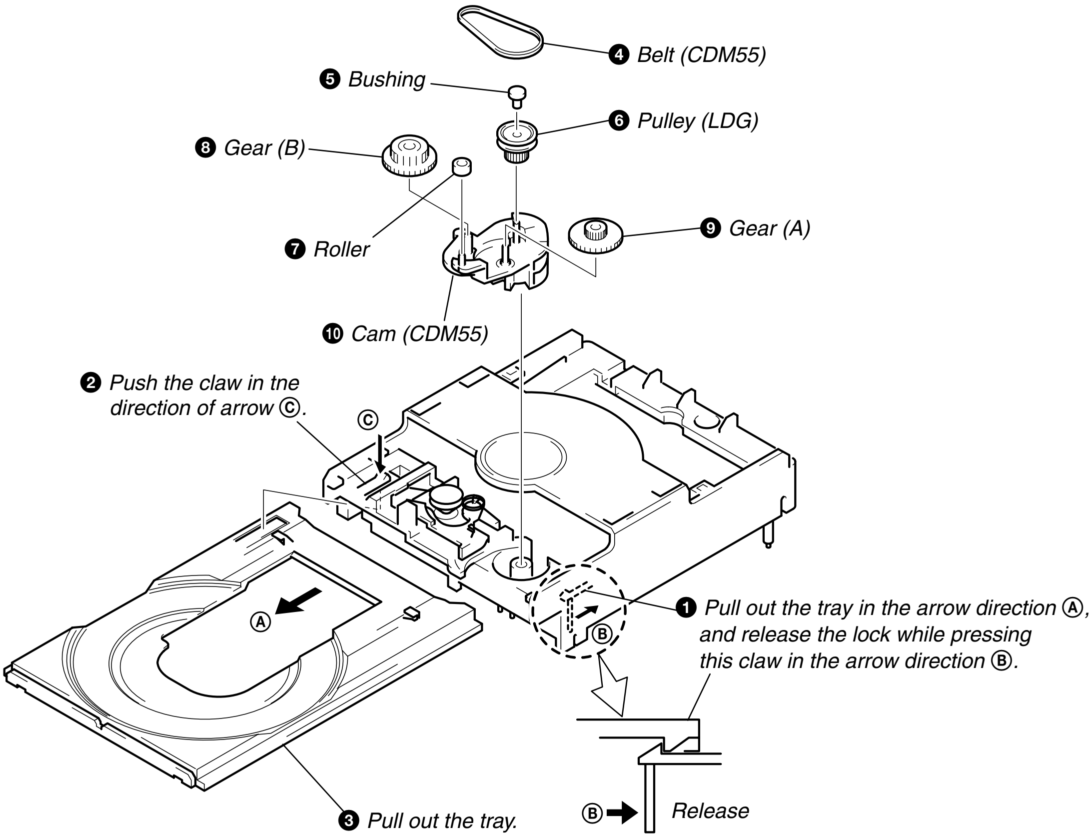
3-4. MAIN BOARD AND POWER TRANSFORMER



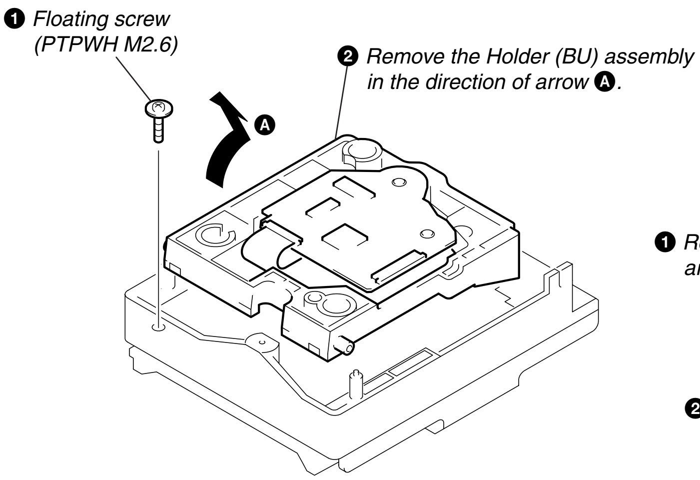
3-5. CD MECHANISM DECK



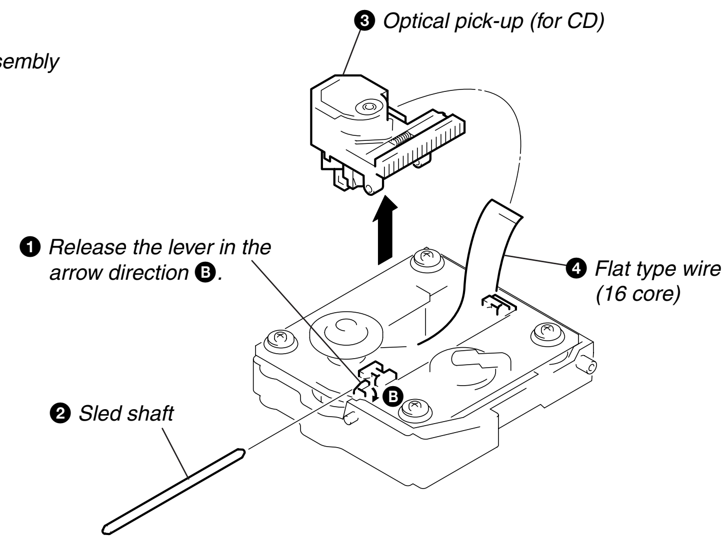
3-6. TRAY, GEAR AND CAM



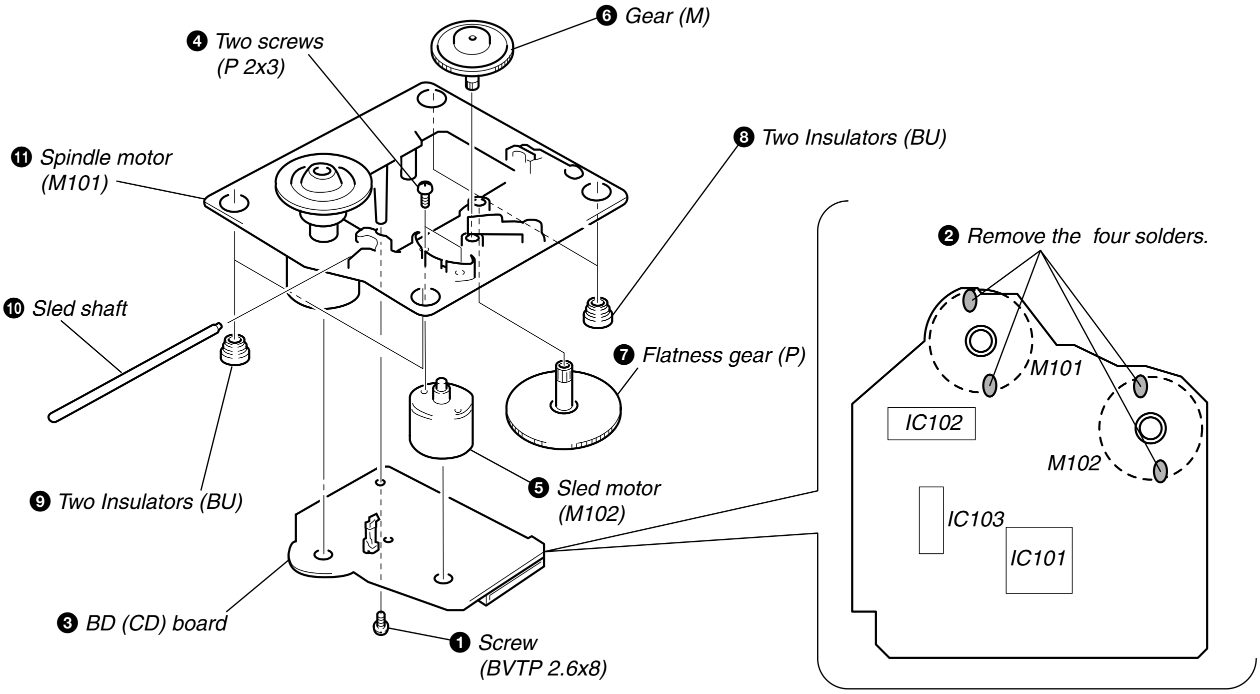
3-7. CD BASE UNIT



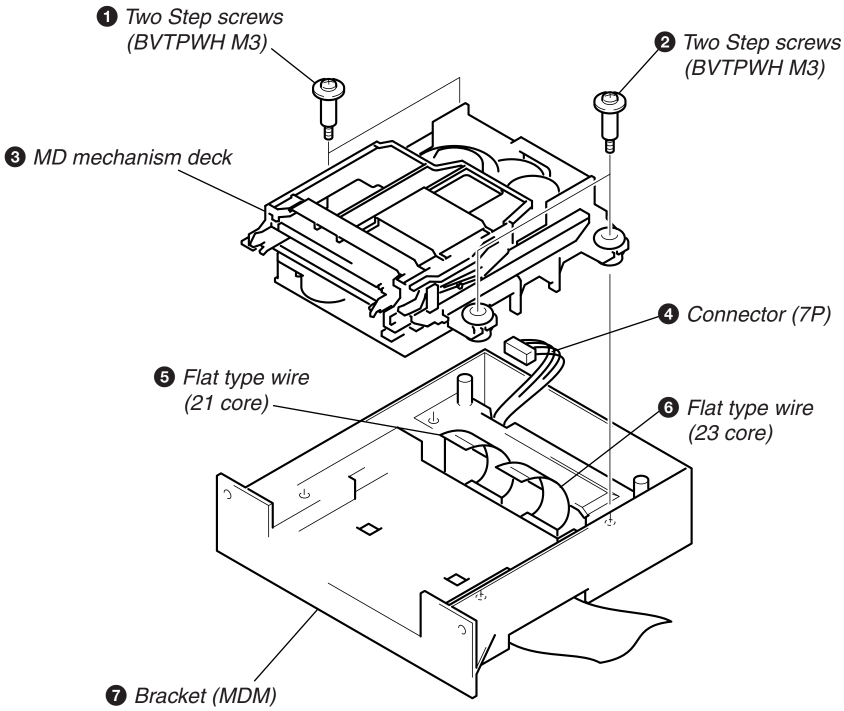
3-8. OPTICAL PICK-UP SECTION OF CD (KSS-213BA/F-NP)



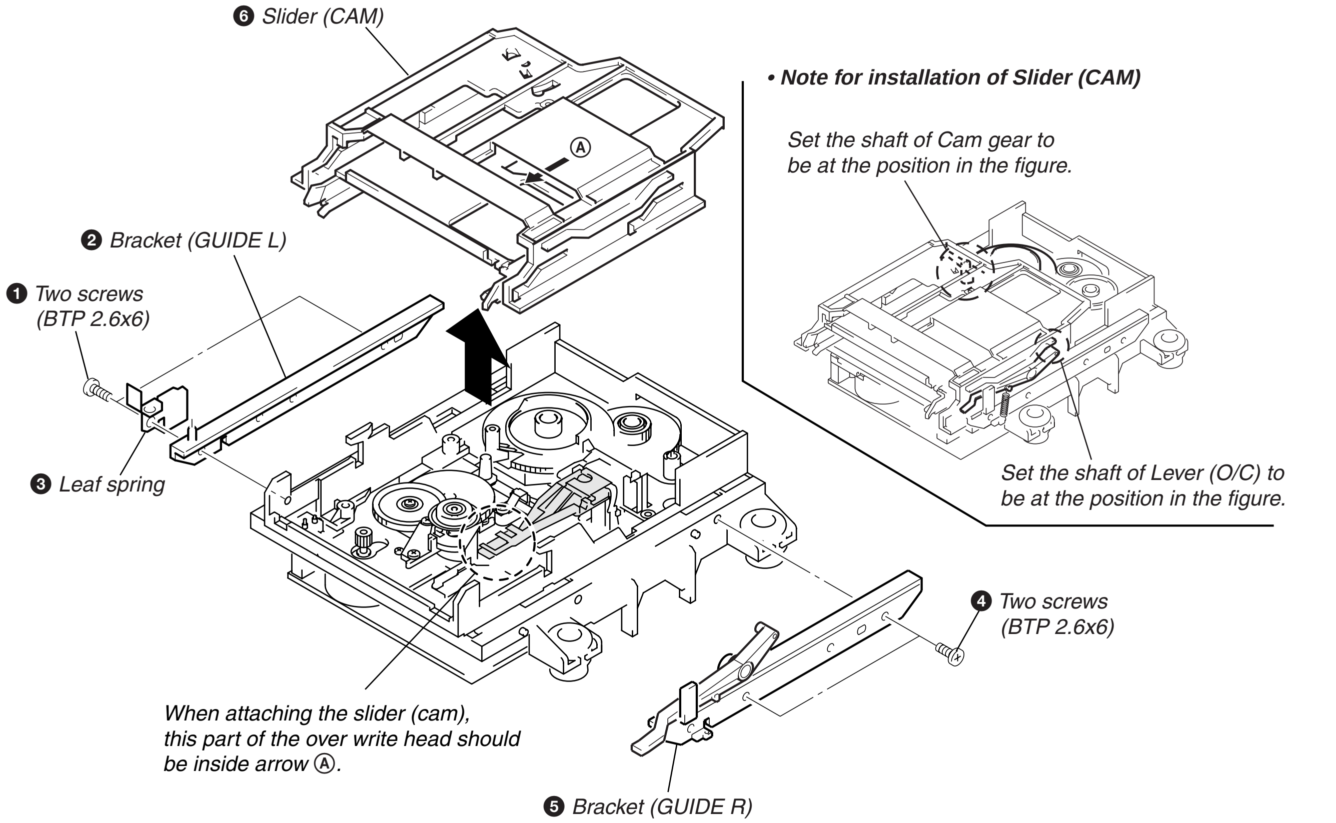
3-9. BD (CD) BOARD, SPINDLE MOTOR (M101) AND SLED MOTOR (M102)



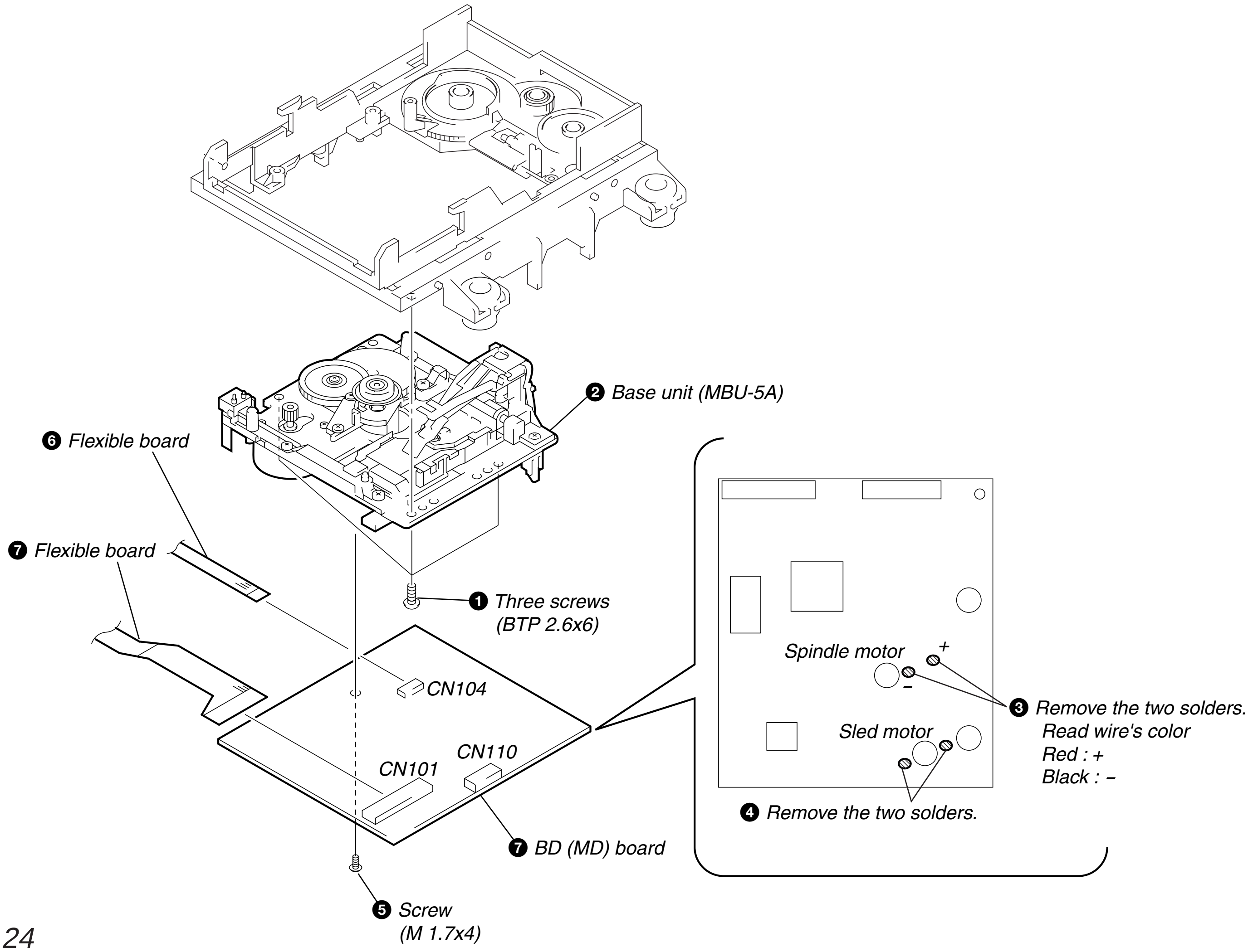
3-10. MD MECHANISM DECK



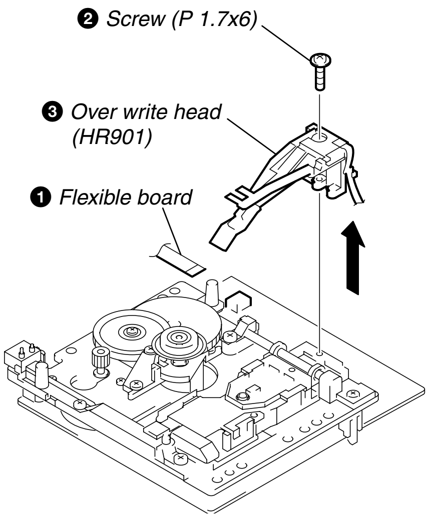
3-11. SLIDER (CAM)



3-12. BASE UNIT (MBU-5A) AND BD (MD) BOARD

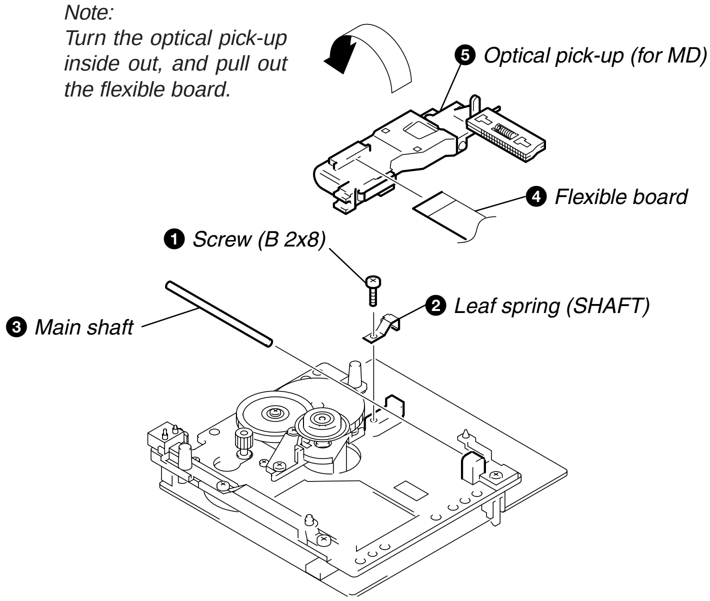


3-13. OVER WRITE HEAD

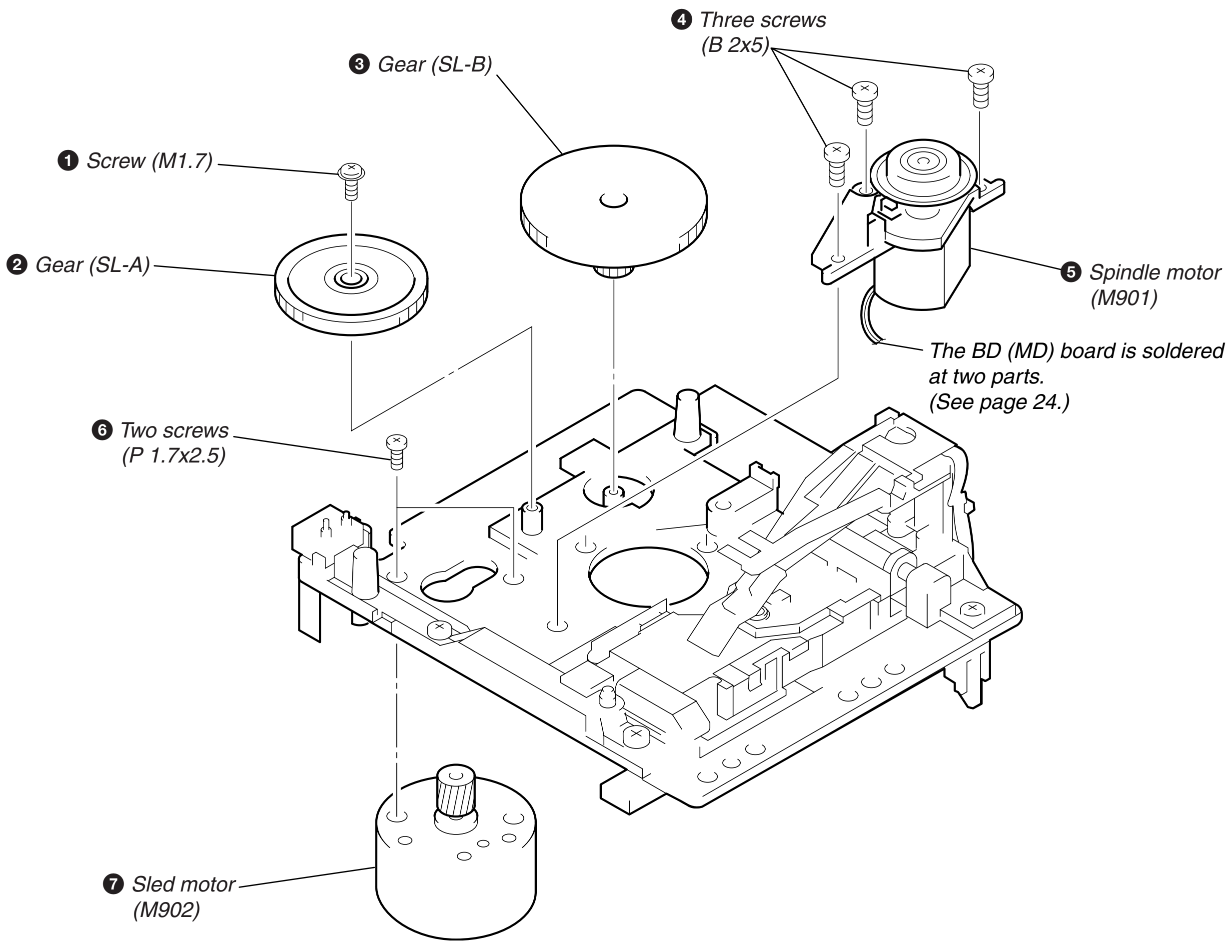


3-14. OPTICAL PICK-UP OF MD (KMS-260B/J1N)

Note:
Turn the optical pick-up inside out, and pull out the flexible board.



3-15. SPINDLE MOTOR (M901) AND SLED MOTOR (M902) (MD)



SECTION 4
TEST MODE

Note 1: About "R"
As this unit has only a few buttons, some operations require the use of remote commander (RM-SJ373/provided with unit: 1-418-554-11) buttons. These operations are indicated as "R" in this manual.
Example: MENU/NO "R" ...Press the MENU/NO button of the remote commander.

4-1. PRECAUTIONS FOR USE OF TEST MODE

- As loading related operations will be performed regardless of the test mode operations being performed, be sure to check that the disc is stopped before setting and removing it.
  Even if the ⏏ (MD) button is pressed while the disc is rotating during continuous playback, continuous recording, etc., the disc will not stop rotating.
  Therefore, it will be ejected while rotating.
  Be sure to press the ⏏ (MD) button after pressing the MENU/NO "R" button and the rotation of disc is stopped.

4-1-1. Recording laser emission mode and operating buttons

- Continuous recording mode (CREC MODE)
- Laser power check mode (LDPWR CHECK)
- Laser power adjustment mode (LDPWR ADJUST)
- Traverse (MO) check (EF MO CHECK)
- Traverse (MO) adjustment (EF MO ADJUST)
- When pressing the ●REC button.

4-2. SETTING THE TEST MODE

The following are two methods of entering the test mode.

Procedure 1: Press the FUNCTION button, and set the function to "MD". When the power ON, press the I/⏻ button while pressing the ■ (MD) button and ● REC button together.
When the test mode is set, "[Check]" will be displayed. Pressing the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button switches between the following four groups; ··⟷ Check ⟷ Adjust ⟷ Service ⟷ Develop ⟷ ···.

Procedure 2: Press the FUNCTION button, and set the function to "MD". When the power ON, press the I/⏻ button while pressing the ■ (MD) button and SYNC REC button together.
When the test mode is set, "TEMP CHECK" will be displayed. By setting the test mode using this procedure, only the "Check" group of procedure 1 can be executed.

4-3. EXITING THE TEST MODE

Press the REPEAT/STEREO/MONO button.

4-4. BASIC OPERATIONS OF THE TEST MODE

All operations are performed using the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button, ENTER/YES "R" button, and MENU/NO "R" button.
The functions of these buttons are as follows.

Function name	Function
⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button	Changes parameters and modes
ENTER/YES "R" button	Proceeds onto the next step. Finalizes input.
MENU/NO "R" button	Returns to previous step. Stops operations.

4-5. SELECTING THE TEST MODE

There are 31 types of test modes as shown below. The groups can be switched by pressing the [⏮ ◀◀/MD/CD/TUNING –] button or [▶▶ ⏭/MD/CD/TUNING +] button. After selecting the group to be used, press the [ENTER/YES "R"] button. After setting a certain group, pressing the [⏮ ◀◀/MD/CD/TUNING –] button or [▶▶ ⏭/MD/CD/TUNING +] button switches between these modes.
Refer to "Group" in the table for details selected.
All items used for servicing can be treated using group S. So be carefully not to enter other groups by mistake.

Display	Contents	Mark	Group (∗)
TEMP CHECK	Temperature compensation offset check		C S
LDPWR CHECK	Laser power check		C S
EF MO CHECK	Traverse (MO) check		C S
EF CD CHECK	Traverse (CD) check		C S
FBIAS CHECK	Focus bias check		C S
S curve CHECK	S letter check	(X)	C
VERIFY MODE	Non-volatile memory check	(X)	C
DETRK CHECK	Detrack check	(X)	C
TEMP ADJUST	Temperature compensation offset adjustment		A S
LDPWR ADJUST	Laser power adjustment		A S
EF MO ADJUST	Traverse (MO) adjustment		A S
EF CD ADJUST	Traverse (CD) adjustment		A S
FBIAS ADJUST	Focus bias adjustment		A S
EEP MODE	Non-volatile memory control	(X) (!)	D
MANUAL CMD	Command transmission	(X)	D
SVDATA READ	Status display	(X)	D
ERR DP MODE	Error history display, clear		S
SLED MOVE	Sled check	(X)	D
ACCESS MODE	Access check	(X)	D
0920 CHECK	Outermost circumference check	(X)	D
HEAD ADJUST	Head position check	(X)	D
CPLAY2 MODE	Same functions as CPLAY MODE	(X)	D
CREC2 MODE	Same functions as CREC MODE	(X)	D
ADJ CLEAR	Initialization of non-volatile memory of adjustment value		A S
AG Set (MO)	Auto gain output level adjustment (MO)		A S
AG Set (CD)	Auto gain output level adjustment (CD)		A S
Iop Read	IOP data display		C S
Iop Write	IOP data write		A S
INFORMATION	Microprocessing version display		C S
CPLAY MODE	Continuous play mode		C A S D
CREC MODE	Continuous recording mode		C A S D

Group (∗)
C: Check A: Adjust
S: Service D: Develop

- For details of each adjustment mode, refer to "5. Electrical Adjustments".
  For details of "ERR DP MODE", refer to "Self-Diagnosis Function" on page 2.
- If a different mode has been selected by mistake, press the [MENU/NO "R"] button to exit that mode.
- Modes with (X) in the Mark column are not used for servicing and therefore are not described in detail. If these modes are set accidentally, press the [MENU/NO "R"] button to exit the mode immediately. Be especially careful not to set the modes with (!) as they will overwrite the non-volatile memory and reset it, and as a result, the unit will not operate normally.

4-5-1. Operating the Continuous Playback Mode

1. Entering the continuous playback mode
   ① Set the disc in the unit. (Whichever recordable discs or discs for playback only are available.)
   ② Press the [⏮ ◀◀/MD/CD/TUNING –] button or [▶▶ ⏭/MD/CD/TUNING +] button and display “CPLAY MODE”.
   ③ Press the [ENTER/YES “R”] button to change the display to “CPLAY MID”.
   ④ When access completes, the display changes to “C1 = □□□□ AD = □□”.
   Note : The numbers “□” displayed show you error rates and ADER.
2. Changing the parts to be played back
   ① Press the [ENTER/YES “R”] button during continuous playback to change the display as below.
   “CPLAY MID” → “CPLAY OUT” → “CPLAY IN” (→ back to “CPLAY MID”)
   When pressed another time, the parts to be played back can be moved.
   ② When access completes, the display changes to “C1 = □□□□ AD = □□”.
   Note : The numbers “□” displayed show you error rates and ADER.
3. Ending the continuous playback mode
   ① Press the [MENU/NO “R”] button. The display will change to “CPLAY MODE”.
   ② Press the [⏏ (MD)] button to remove the disc.
   Note : The playback start addresses for IN, MID, and OUT are as follows.

IN	40h cluster
MID	300h cluster
OUT	700h cluster

4-5-2. Operating the Continuous Recording Mode (Use only when performing self-recording/palyback check.)

1. Entering the continuous recording mode
   ① Set a recordable disc in the unit.
   ② ress the [⏮ ◀◀/MD/CD/TUNING –] button or [▶▶ ⏭/MD/CD/TUNING +] button and display “CREC MODE”.
   ③ Press the [ENTER/YES “R”] button to change the display to “CREC MID”.
   ④ When access completes, the display changes to “CREC (□□□□)” and [● REC] indicator lights up.
   Note : The numbers “□” displayed shows you the recording position addresses.
2. Changing the parts to be recorded
   ① When the [ENTER/YES “R”] button is pressed during continuous recording, the display changes as below.
   “C REC MID” → “C REC OUT” → “C REC IN” (→ back to “C REC MID”)
   When pressed another time, the parts to be recorded can be changed. [● REC] indicator goes off.
   ② When access completes, the display changes to “CREC (□□□□)” and [● REC] indicator lights up.
   Note : The numbers “□” displayed shows you the recording position addresses.
3. Ending the continuous recording mode
   ① Press the [MENU/NO “R”] button. The display changes to “CREC MODE” and [● REC] indicator goes off.
   ② Press the [⏏ (MD)] button to remove the disc.
   Note 1 : The recording start addresses for IN, MID, and OUT are as follows.

IN	40h cluster
MID	300h cluster
OUT	700h cluster

   Note 2 : The [MENU/NO “R”] button can be used to stop recording anytime.
   Note 3 : Do not perform continuous recording for long periods of time above 5 minutes.
   Note 4 : During continuous recording, be careful not to apply vibration.

4-5-3. Non-Volatile Memory Mode (EEP MODE)

This mode reads and writes the contents of the non-volatile memory.
It is not used in servicing. If set accidentally, press the [MENU/NO “R”] button immediately to exit it.

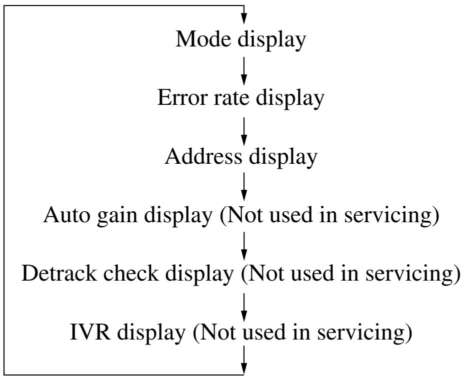
4-6. FUNCTIONS OF OTHER BUTTONS

Function	Contents
▶II (MD)	Sets continuous playback when pressed in the STOP state. When pressed during continuous playback, the tracking servo turns ON/OFF.
■ (MD)	Stops continuous playback and continuous recording.
▶▶ ▶▶I/MD/CD/TUNING +	The sled moves to the outer circumference only when this is pressed.
I◀◀ ◀◀/MD/CD/TUNING –	The sled moves to the inner circumference only when this is pressed.
CLEAR “R”	Switches between the pit and groove modes when pressed.
PLAY MODE/TUNING MODE	Switches the spindle servo mode (CLV S ⟷ CLV A).
DISPLAY “R”	Switches the displayed contents each time the button is pressed.
⏏ (MD)	Ejects the disc
REPEAT/STEREO/MONO	Exits the test mode

Use the remote commander (RM-SJ373/provided with unit: 1-418-554-11) buttons for operations indicated as “R”.

4-7. TEST MODE DISPLAYS

Each time the DISPLAY “R” button is pressed, the display changes in the following order.



1. Mode display

Displays “TEMP ADJUST”, “CPLAYMODE”, etc.

2. Error rate display

Displays the error rate in the following way.

C1 = □□□□ AD = □□
C1 = Indicates the C1 error.
AD = Indicates ADER.

3. Address display

The address is displayed as follows. (MO:recordable disc, CD:playback only disc)
Pressing the CLEAR “R” button switches between the groove display and pit display.
h = □□□□ s = □□□□ (MO pit and CD)
h = □□□□ a = □□□□ (MO groove)
h = Indicates the header address.
s = Indicates the SUBQ address.
a = Indicates the ADIP address.

Note: “–” is displayed when servo is not imposed.

4. Auto gain display (Not used in servicing)

The auto gain is displayed as follows.
AG = □□ / □□ [□□]

5. Detrack check display (Not used in servicing)

The detrack is displayed as follows.
ADR = □□□□□□□□

6. IVR display (Not used in servicing)

The IVR is displayed as follows.
[□□][□□][□□

MEANINGS OF OTHER DISPLAYS

Display	Contents	
	When Lit	When Off
► (MD) *	During continuous playback (CLV: ON)	STOP (CLV: OFF)
▮▮ (MD) *	Tracking servo OFF	Tracking servo ON
● REC *	Recording mode ON	Recording mode OFF
SYNC	CLV low speed mode	CLV normal mode
LEVEL-SYNC	ABCD adjustment completed	
OVER	Tracking offset cancel ON	Tracking offset cancel OFF
1	Tracking auto gain OK	
REPEAT	Focus auto gain OK	
TRACK	Pit	Groove
DISC	High reflection	Low reflection
SHUFFLE	CLV S	CLV A
MONO	CLV LOCK	CLV UNLOCK

* Items shown correspond to the indicated button indicators.

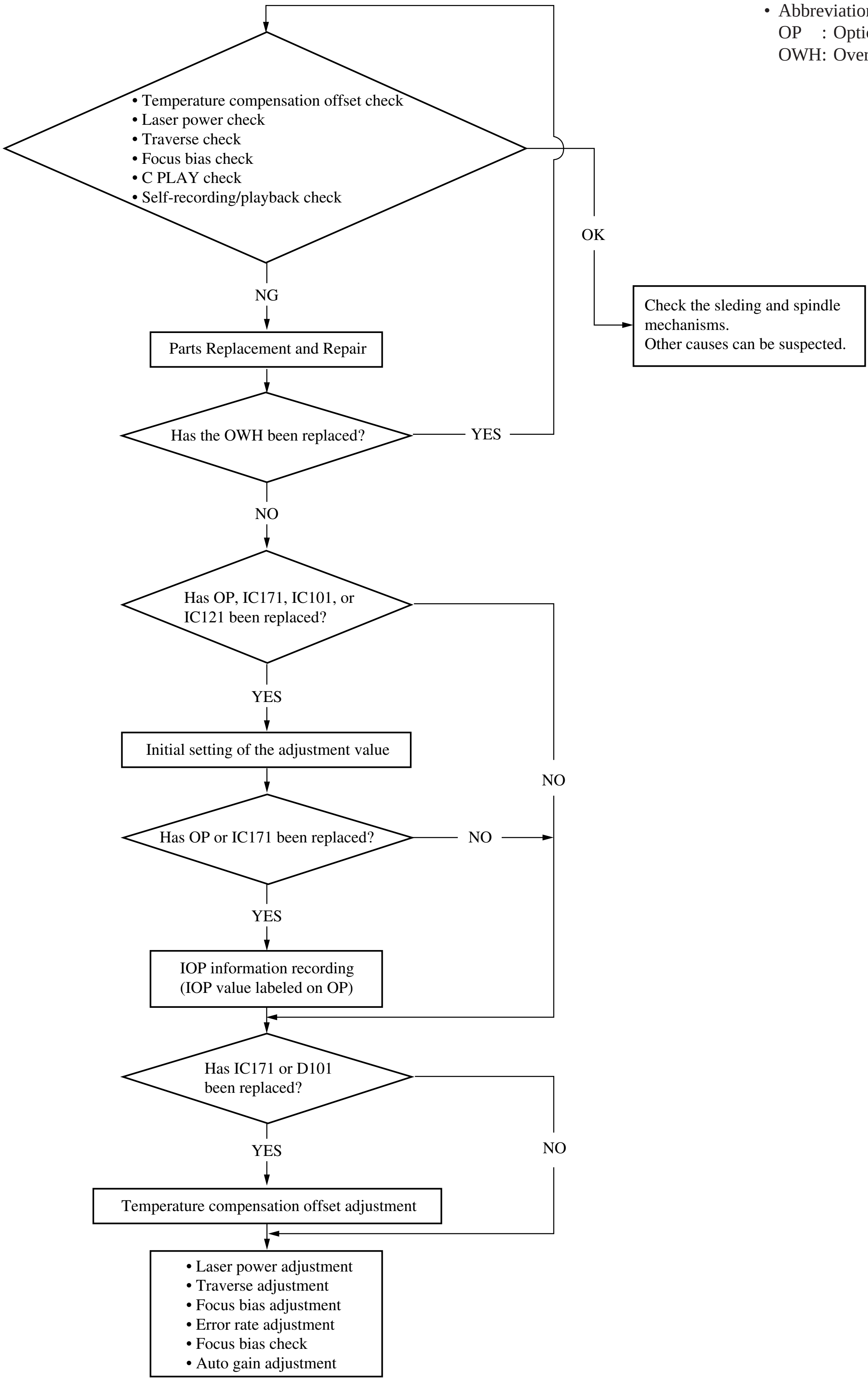
SECTION 5
ELECTRICAL ADJUSTMENTS

MD SECTION

5-1. PARTS REPLACEMENT AND ADJUSTMENT

- Check and adjust the MDM and MBU as follows.
  The procedure changes according to the part replaced

- Abbreviation
  OP : Optical pick-up
  OWH: Overwrite head

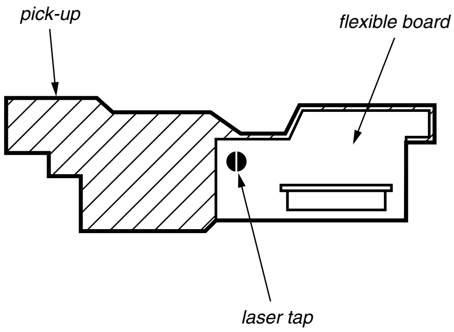


5-2. PRECAUTIONS FOR CHECKING LASER DIODE EMISSINON

To check the emission of the laser diode during adjustments, never view directly from the top as this may lose your eye-sight.

5-3. PRECAUTIONS FOR USE OF OPTICAL PICK-UP (KMS-260B)

As the laser diode in the optical pick-up is easily damaged by static electricity, solder the laser tap of the flexible board when using it. Before disconnecting the connector, desolder first. Before connecting the connector, be careful not to remove the solder. Also take adequate measures to prevent damage by static electricity. Handle the flexible board with care as it breaks easily.



Optical pick-up flexible board

5-4. PRECAUTIONS FOR ADJUSTMENTS

1) When replacing the following parts, perform the adjustments and checks with ○ in the order shown in the following table.

	Optical Pick-up	BD Board			
		IC171	D101	IC101, IC121	IC192
1. Initial setting of adjustment value	○	○	×	○	×
2. Recording of IOP information (Value written in the pick-up)	○	○	×	×	×
3. Temperature compensation offset adjustment	×	○	○	×	×
4. Laser power adjustment	○	○	×	○	○
5. Traverse adjustment	○	○	×	○	×
6. Focus bias adjustment	○	○	×	○	×
7. Error rate check	○	○	×	○	×
8. Auto gain output level adjustment	○	○	×	○	×

2) Set the test mode when performing adjustments.
   After completing the adjustments, exit the test mode.
   Perform the adjustments and checks in "group S" of the test mode.
3) Perform the adjustments to be needed in the order shown.
4) Use the following tools and measuring devices.
   - Check Disc (MD) TDYS-1
     (Parts No. 4-963-646-01)
   - Test Disk (MDW-74/AU-1) (Parts No. 8-892-341-41)
   - Laser power meter LPM-8001 (Parts No. J-2501-046-A)
     or
     MD Laser power meter 8010S (Parts No. J-2501-145-A)
   - Oscilloscope (Measure after performing CAL of prove.)
   - Digital voltmeter
   - Thermometer
   - Jig for checking BD board waveform
     (Parts No. : J-2501-149-A)
5) When observing several signals on the oscilloscope, etc., make sure that VC and ground do not connect inside the oscilloscope.
   (VC and ground will become short-circuited.)
6) Using the above jig enables the waveform to be checked without the need to solder.
   (Refer to Servicing Note on page 6.)
7) As the disc used will affect the adjustment results, make sure that no dusts nor fingerprints are attached to it.

Note:
When performing laser power checks and adjustment (electrical adjustment), use of the new MD laser power meter 8010S (J-2501-145-A) instead of the conventional laser power meter is convenient. It sharply reduces the time and trouble to set the laser power meter sensor onto the objective lens of the optical pick-up.

5-5. CREATING CONTINUOUSLY RECORDED DISC

* This disc is used in focus bias adjustment and error rate check.
The following describes how to create a continuous recording disc.

1. Insert a disc (blank disc) commercially available.
2. press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button and display "CREC MODE".
3. Press the [ENTER/YES "R"] button again to display "CREC MID".
   Display "CREC (0300)" and start to recording.
4. Complete recording within 5 minutes.
5. Press the [MENU/NO "R"] button and stop recording .
6. Press the [⏏ (MD)] button and remove the disc.

The above has been how to create a continuous recorded data for the focus bias adjustment and error rate check.

Note :
- Be careful not to apply vibration during continuous recording.

5-6. CHECKS PRIOR TO REPAIRS

These checks are performed before replacing parts according to “approximate specifications” to determine the faulty locations. For details, refer to “Checks Prior to Parts Replacement and Adjustments” (See page 13).

5-6-1. Temperature Compensation Offset Check

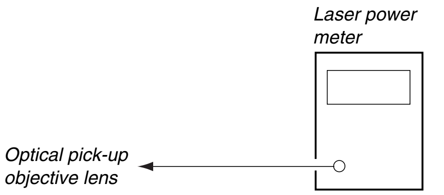
When performing adjustments, set the internal temperature and room temperature to 22 to 28°C.

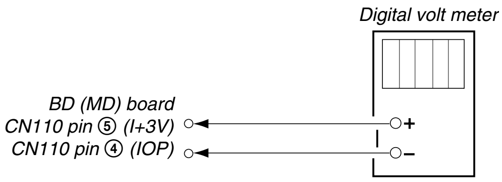
Checking Procedure:

1. Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button to display “TEMP CHECK”.
2. Press the [ENTER/YES “R”] button.
3. “T=@@(##) [OK]” should be displayed. If “T=@@ (##) [NG]” is displayed, it means that the results are bad.
(@@ indicates the current value set, and ## indicates the value written in the non-volatile memory.)

5-6-2. Laser Power Check

Before checking, check the IOP value of the optical pick-up.
(Refer to 5-8. Recording and Displaying IOP Information.)





Connection :

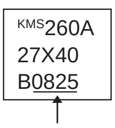
Checking Procedure:

1. Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button continuously to move the optical pick-up.)
Connect the digital volt meter to CN110 pin ⑤ (I+3V) and CN110 pin ④ (IOP).
2. Then, press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button and display “LDPWR CHECK”.
3. Press the [ENTER/YES “R”] button once and display “LD 0.9 mW $ □□”. Check that the reading of the laser power meter become 0.84 to 0.92 mW.
4. Press the [ENTER/YES “R”] button once more and display “LD 7.0 mW $ □□”. Check that the reading the laser power meter and digital volt meter satisfy the specified value.

Specified Value :

Laser power meter reading : 7.0 ± 0.2 mW
Digital voltmeter reading : Optical pick-up displayed value ± 10%

(Optical pick-up label)



(For details of the method for checking this value, refer to “5-8. Recording and Displaying IOP Information”.)

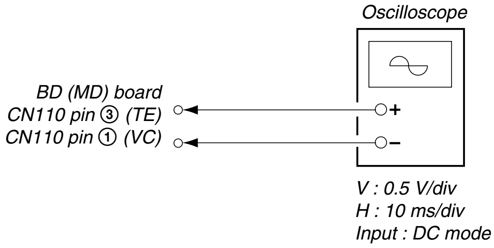
Iop = 82.5 mA in this case
Iop (mA) = Digital voltmeter reading (mV)/1 (Ω)

5. Press the [MENU/NO “R”] button and display “LDPWR CHECK” and stop the laser emission.
(The [MENU/NO “R”] button is effective at all times to stop the laser emission.)

Note 1: After step 4, each time the [ENTER/YES “R”] button is pressed, the display will be switched between “LD 0.7 mW $ □□”, “LD 6.2 mW $ □□”, and “LD WP ホセイ $ □□”. Nothing needs to be performed here.

5-6-3. Traverse Check

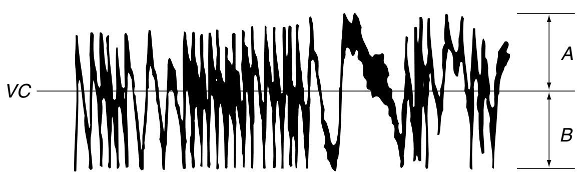
Connection :



Checking Procedure:

1. Connect an oscilloscope to CN110 pin ③ (TE) and CN110 pin ① (VC) of the BD (MD) board.
2. Load a disc (any available on the market). (Refer to Note 1.)
3. Press the [▶▶⏭/MD/CD/TUNING +] button continuously and move the optical pick-up outside the pit.
4. Press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button and display “EF MO CHECK”.
5. Press the [ENTER/YES “R”] button and display “EFB = □□ MO-R”.
(Laser power READ power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
6. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button.
(Read power traverse checking)

(Traverse Waveform)

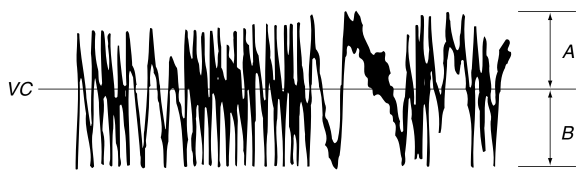


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

7. Press the [ENTER/YES “R”] button and display “EFB = □□ MO-W”.
8. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not press the [⏮◀◀/MD/CD/TUNING –] button or [▶▶⏭/MD/CD/TUNING +] button.
(Write power traverse checking)

(Traverse Waveform)

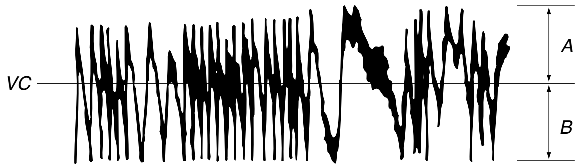


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

9. Press the ENTER/YES "R" button display "EFB = □□ MO-P". Then, the optical pick-up moves to the pit area automatically and servo is imposed.
10. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not press the ⏮◀◀/MD/CD TUNING– button or ▶▶⏭/MD/CD/TUNING+ button.

(Traverse Waveform)

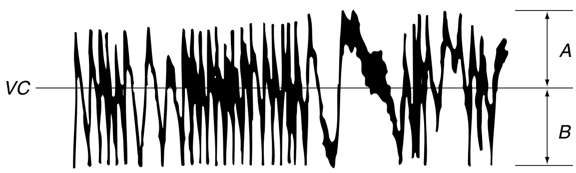


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

11. Press the ENTER/YES "R" button display "EF MO CHECK" The disc stops rotating automatically.
12. Press the ⏏ (MD) button and remove the disc.
13. Load the check disc (MD) TDYS-1.
14. Press the ▶▶⏭/MD/CD/TUNING + button and display "EF CD CHECK".
15. Press the ENTER/YES "R" button and display "EFB = □□ CD". Servo is imposed automatically.
16. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not press the ⏮◀◀/MD/CD TUNING– button or ▶▶⏭/MD/CD/TUNING+ button.

(Traverse Waveform)



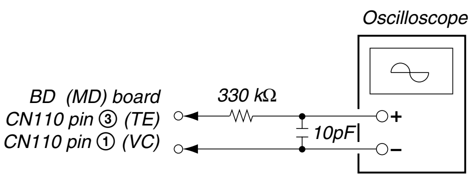
Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

17. Press the ENTER/YES "R" button and display "EF CD CHECK".
18. Press the ⏏ (MD) button and remove the check disc (MD) TDYS-1.

Note 1 : MO reading data will be erased during if a recorded disc is used in this adjustment.

Note 2 : If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



5-6-4. Focus Bias Check

Change the focus bias and check the focus tolerance amount.

Checking Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display "CPLAY MODE".
3. Press the ENTER/YES "R" button twice and display "CPLAY MID".
4. Press the MENU/NO "R" button when "C1 = □□□□ AD = □□" is displayed.
5. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display "FBIAS CHECK".
6. Press the ENTER/YES "R" button and display " □□□□/□□ c = □□".
   The first four digits indicate the C1 error rate, the two digits after "/" indicate ADER, and the 2 digits after "c =" indicate the focus bias value.
   Check that the C1 error is below 220 and ADER is below 2.
7. Press the ENTER/YES "R" button and display " □□□□/□□ b = □□".
   Check that the C1 error is below 220 and ADER is below 2.
8. Press the ENTER/YES "R" button and display " □□□□/□□ a = □□".
   Check that the C1 error is below 220 and ADER is below 2.
9. Press the MENU/NO "R" button, next press the ⏏ (MD) button, and remove the test disc.

5-6-5. C PLAY Checking

MO Error Rate Check

Checking Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display "CPLAY MODE".
3. Press the ENTER/YES "R" button and display "CPLAY MID".
4. The display changes to "C1 = □□□□ AD = □□".
5. If the C1 error rate is below 80, check that ADER is below 2.
6. Press the MENU/NO "R" button, stop playback, press the ⏏ (MD) button, and test disc.

CD Error Rate Check

Checking Procedure :

1. Load a check disc (MD) TDYS-1.
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display "CPLAY MODE".
3. Press the ENTER/YES "R" button twice and display "CPLAY MID".
4. The display changes to "C1 = □□□□ AD = □□".
5. Check that the C1 error rate is below 50.
6. Press the MENU/NO "R" button, stop playback, press the ⏏ (MD) button, and the test disc.

5-6-6. Self-Recording/playback Check

Prepare a continuous recording disc using the unit to be repaired and check the error rate.

Checking Procedure :

1. Insert a recordable disc (blank disc) into the unit.
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button to display "CREC MODE".
3. Press the ENTER/YES "R" button to display the "CREC MID".
4. When recording starts, ● REC indicator lights up displayed, this becomes "CREC (@@@@)" (@@@@ is the address), and recording starts.
5. About 1 minute later, press the MENU/NO "R" button to stop continuous recording.
6. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button to display "C PLAY MODE".
7. Press the ENTER/YES "R" button to display "C PLAY MID".

8. “C1 = □□□□ AD = □□” will be displayed.
9. Check that the C1 error becomes below 80 and the AD error below 2.
10. Press the [MENU/NO “R”] button to stop playback, and press the [⏏ (MD)] button and remove the disc.

5-7. INITIAL SETTING OF ADJUSTMENT VALUE

Note:

Mode which sets the adjustment results recorded in the non-volatile memory to the initial setting value. However the results of the temperature compensation offset adjustment will not change to the initial setting value.

If initial setting is performed, perform all adjustments again excluding the temperature compensation offset adjustment.

For details of the initial setting, refer to “5-4. Precautions on Adjustments” and execute the initial setting before the adjustment as required.

Setting Procedure :

1. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button to display “ADJ CLEAR”.
2. Press the [ENTER/YES “R”] button. “Complete!” will be displayed momentarily and initial setting will be executed, after which “ADJ CLEAR” will be displayed.

5-8. RECORDING AND DISPLAYING THE IOP INFORMATION

The IOP data can be recorded in the non-volatile memory. The IOP value on the label of the optical pickup and the IOP value after the adjustment will be recorded. Recording these data eliminates the need to read the label on the optical pick-up.

Recording Procedure :

1. When the power ON, press the [I/⏻] button while pressing the [■ (MD)] button and [● (REC)] button together.
2. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button to display “[Service]”, and press the [ENTER/YES “R”] button. (If nothing is displayed, press the [FUNCTION] button and set the function to “MD”.
3. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button to display “Iop.Write”, and press the [ENTER/YES “R”] button.
4. The display becomes Ref=@@@.@ (@ is an arbitrary number) and the numbers which can be changed will blink.
5. Input the IOP value written on the optical pick-up.
   To select the number : Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button.
   To select the digit : Press the [SYNC REC] button.
6. When the [ENTER/YES “R”] button is pressed, the display becomes “Measu=@@@.@” (@ is an arbitrary number).
7. As the adjustment results are recorded for the 6 value. Leave it as it is and press the [ENTER/YES “R”] button.
8. “Complete!” will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become “Iop Write”.

Display Procedure :

1. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button to display “Iop.Read”.
2. When the [ENTER/YES “R”] button is pressed, “@@.@/##.#” will be displayed and the recorded contents are displayed.
   @@.@ indicates the Iop value labeled on the pick-up.
   ##.# indicates the Iop value after adjustment
3. To end, press the [SYNC REC] button or [MENU/NO “R”] button to display “Iop Read”.

5-9. TEMPERATURE COMPENSATION OFFSET ADJUTMENT

Save the temperature data at that time in the non-volatile memory as 25 ˚C reference data.

Note :

1. Usually, do not perform this adjustment.
2. Perform this adjustment in an ambient temperature of 22 ˚C to 28 ˚C. Perform it immediately after the power is turned on when the internal temperature of the unit is the same as the ambient temperature of 22 ˚C to 28 ˚C.
3. When D101 has been replaced, perform this adjustment after the temperature of this part has become the ambient temperature.

Adjusting Procedure :

1. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button and display “TEMP ADJUST”.
2. Press the [ENTER/YES “R”] button and select the “TEMP ADJUST” mode.
3. “TEMP = □□ [OK]” and the current temperature data will be displayed.
4. To save the data, press the [ENTER/YES “R”] button.
   When not saving the data, press the [MENU/NO “R”] button.
5. When the [ENTER/YES “R”] button is pressed, “TEMP = □□ SAVE” will be displayed and turned back to “TEMP ADJUST” display then. When the [MENU/NO “R”] button is pressed, “TEMP ADJUST” will be displayed immediatelly.

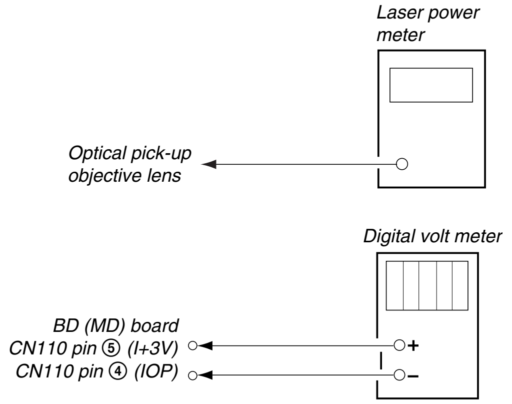
Specified Value :

The “TEMP = □□” should be within “E0 - EF”, “F0 - FF”, “00 - 0F”, “10 - 1F” and “20 - 2F”.

5-10. LASER POWER ADJUSTMENT

Check the IOP value of the optical pick-up before adjustments.
(Refer to 5-8. Recording and Displaying IOP Information.)

Connection :



Adjusting Procedure :

1. Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button continuously to move the optical pick-up.)
   Connect the digital volt meter to CN110 pin ⑤ (I+3V) and CN110 pin ④ (IOP).
2. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button and display “LDPWR ADJUST”.
   (Laser power : For adjustment)
3. Press the [ENTER/YES “R”] button once and display “LD 0.9 mW $ □□”.
4. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button so that the reading of the laser power meter becomes 0.85 to 0.91 mW. Press the [ENTER/YES “R”] button after setting the range knob of the laser power meter, and save the adjustment results. (“LD SAVE $ □□” will be displayed for a moment.)

5. Then “LD 7.0 mW $ ⬚⬚” will be displayed.
6. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button so that the reading of the laser power meter becomes 6.9 to 7.1 mW, press the [ENTER/YES “R”] button and save it.

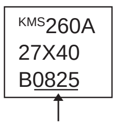
Note : Do not perform the emission with 7.0 mW more than 15 seconds continuously.

7. Then, Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button and display “LDPWR CHECK”.
8. Press the [ENTER/YES “R”] button once and display “LD 0.9 mW $ ⬚⬚”. Check that the reading of the laser power meter become 0.85 to 0.91 mW.
9. Press the [ENTER/YES “R”] button once more and display “LD 7.0 mW $ ⬚⬚”. Check that the reading the laser power meter and digital volt meter satisfy the specified value.
   Note down the digital voltmeter reading value.

Specified Value :

Laser power meter reading : 7.0 ± 0.1 mW
Digital voltmeter reading : Optical pick-up displayed value ± 10%

(Optical pick-up label)



(For details of the method for checking this value, refer to “5-8. Recording and Displaying IOP Information”.)

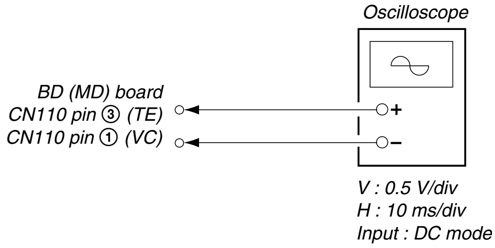
Iop = 82.5 mA in this case
Iop (mA) = Digital voltmeter reading (mV)/1 (Ω)

10. Press the [MENU/NO “R”] button and display “LDPWR CHECK” and stop the laser emission.
    (The [MENU/NO “R”] button is effective at all times to stop the laser emission.)
11. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button to display “Iop.Write”.
12. Press the [ENTER/YES “R”] button. When the display becomes Ref=@@@.@ (@ is an arbitrary number), press the [ENTER/YES “R”] button to display “Measu=@@@.@” (@ is an arbitrary number).
13. The numbers which can be changed will blink. Input the Iop value noted down at step 9.
    To select the number : Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button.
    To select the digit : Press the [SYNC REC] button.
14. When the [ENTER/YES “R”] button is pressed, “Complete!” will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become “Iop Write”.

Note 1: After step 4, each time the [ENTER/YES “R”] button is pressed, the display will be switched between “LD 0.7 mW $ ⬚⬚”, “LD 6.2 mW $ ⬚⬚”, and “LD Wp ホセイ $ ⬚⬚”. Nothing needs to be performed here.

5-11. TRAVERSE ADJUSTMENT

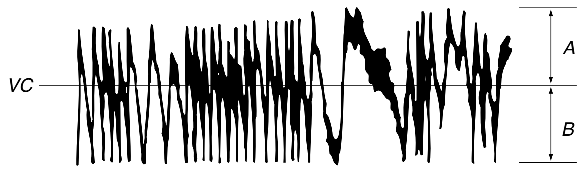
Connection :



Adjusting Procedure :

1. Connect an oscilloscope to CN110 pin ③ (TE) and CN110 pin ① (VC) of the BD board.
2. Load a disc (any available on the market). (Refer to Note 1.)
3. Press the [▶▶ ▶▶|/MD/CD/TUNING +] button continuously and move the optical pick-up outside the pit.
4. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button and display “EF MO ADJUST”.
5. Press the [ENTER/YES “R”] button and display “EFB = ⬚⬚ MO-R”.
   (Laser power READ power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
6. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button so that the waveform of the oscilloscope becomes the specified value.
   (When the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button is pressed, the ⬚⬚ of “EFB= ⬚⬚” changes and the waveform changes.) In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (Read power traverse adjustment)

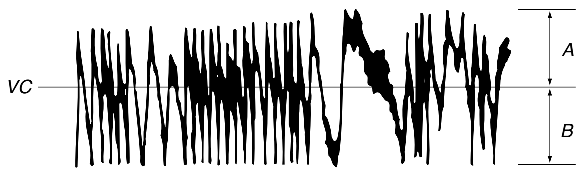
   (Traverse Waveform)



Specification A = B

7. Press the [ENTER/YES “R”] button and save the result of adjustment to the non-volatile memory (“EFB = ⬚⬚ SAVE” will be displayed for a moment. Then “EFB = ⬚⬚ MO-W” will be displayed).
8. Press the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button so that the waveform of the oscilloscope becomes the specified value.
   (When the [|◀◀ ◀◀/MD/CD/TUNING –] button or [▶▶ ▶▶|/MD/CD/TUNING +] button is pressed, the ⬚⬚ of “EFB- ⬚⬚” changes and the waveform changes.) In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (Write power traverse adjustment)

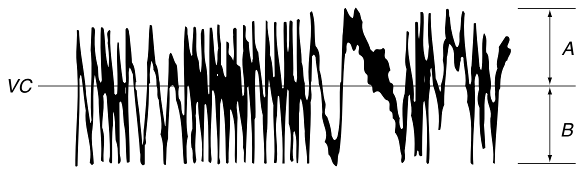
   (Traverse Waveform)



Specification A = B

9. Press the ENTER/YES "R" button, and save the adjustment results in the non-volatile memory. ("EFB = □□ SAVE" will be displayed for a moment.)
10. "EFB = □□ MO-P". will be displayed.
    The optical pick-up moves to the pit area automatically and servo is imposed.
11. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button until the waveform of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

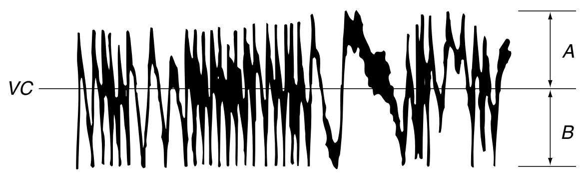
(Traverse Waveform)



Specification A = B

12. Press the ENTER/YES "R" button, and save the adjustment results in the non-volatile memory. ("EFB = □□ SAVE" will be displayed for a moment.)
    Next "EF MO ADJUST" is displayed. The disc stops rotating automatically.
13. Press the ⏏ (MD) button and remove the disc.
14. Load the check disc (MD) TDYS-1.
15. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display "EF CD ADJUST".
16. Press the ENTER/YES "R" button and display "EFB = □□ CD". Servo is imposed automatically.
17. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button so that the waveform of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

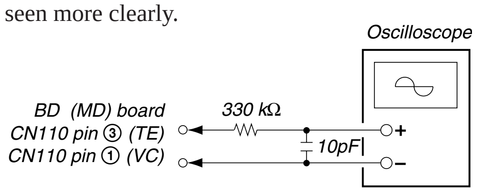
(Traverse Waveform)



Specification A = B

18. Press the ENTER/YES "R" button, display "EFB = □□ SAVE" for a moment and save the adjustment results in the non-volatile memory.
    Next "EF CD ADJUST" will be displayed.
19. Press the ⏏ (MD) button and remove the check disc (MD) TDYS-1.

Note 1 : MO reading data will be erased during if a recorded disc is used in this adjustment.
Note 2 : If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.

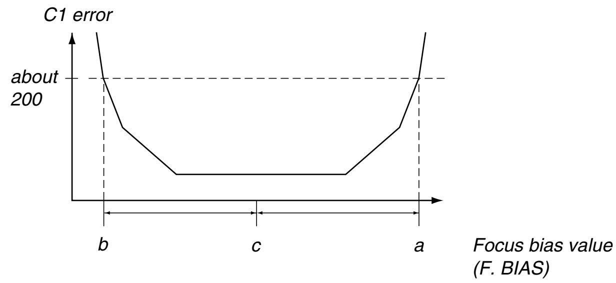


5-12. FOCUS BIAS ADJUSTMENT

Adjusting Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display "CPLAY MODE".
3. Press the ENTER/YES "R" button and display "CPLAY MID".
4. Press the MENU/NO "R" button when "C1 = □□□□ AD = □□" is displayed.
5. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display "FBIAS ADJUS".
6. Press the ENTER/YES "R" button and display " □□□□/□□ a = □□".
   The first four digits indicate the C1 error rate, the two digits after [/] indicate ADER, and the 2 digits after [a =] indicate the focus bias value.
7. Press the ▶▶⏭/MD/CD/TUNING + button and find the focus bias value at which the C1 error rate becomes about 200 (Refer to Note 2).
8. Press the ENTER/YES "R" button and display " □□□□/□□ b = □□".
9. Press the ⏮◀◀/MD/CD/TUNING – button and find the focus bias value at which the C1 error rate becomes about 200.
10. Press the ENTER/YES "R" button and display " □□□□/□□ c = □□".
11. Check that the C1 error rate is below 50 and ADER is 00. Then press the ENTER/YES "R" button.
12. If the "(□□" in "□□ - □□ - □□ (□□" is above 20, press the ENTER/YES "R" button.
    If below 20, press the MENU/NO"R" button and repeat the adjustment from step 2.
13. Press the ⏏ (MD) button to remove the test disc.

Note 1 : The relation between the C1 error and focus bias is as shown in the following figure. Find points a and b in the following figure using the above adjustment. The focal point position C is automatically calculated from points a and b.
Note 2 : As the C1 error rate changes, perform the adjustment using the average vale.



5-13. ERROR RATE CHECK

5-13-1. CD Error Rate Check

Checking Procedure :

1. Load a check disc (MD) TDYS-1.
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display “CPLAY MODE”.
3. Press the ENTER/YES “R” button twice and display “CPLAY MID”.
4. The display changes to “C1 = □□□□ AD = □□”.
5. Check that the C1 error rate is below 20.
6. Press the MENU/NO “R” button, stop playback, press the ⏏ (MD) button, and remove the test disc.

5-13-2. MO Error Rate Check

Checking Procedure :

1. Load a test disc (MDW-74/AU-1).
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display “CPLAY MODE”.
3. Press the ENTER/YES “R” button and display “CPLAY MID”.
4. The display changes to “C1 = □□□□ AD = □□”.
5. If the C1 error rate is below 50, check that ADER is 00.
6. Press the MENU/NO “R” button, stop playback, press the ⏏ (MD) button, and remove the test disc.

5-14. FOCUS BIAS CHECK

Change the focus bias and check the focus tolerance amount.

Checking Procedure :

1. Load a test disc (MDW-74/AU-1).
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display “CPLAY MODE”.
3. Press the ENTER/YES “R” button twice and display “CPLAY MID”.
4. Press the MENU/NO “R” button when “C1 = □□□□ AD = □□” is displayed.
5. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button and display “FBIAS CHECK”.
6. Press the ENTER/YES “R” button and display “ □□□□/□□ c = □□”.
   The first four digits indicate the C1 error rate, the two digits after “/” indicate ADER, and the 2 digits after “c =” indicate the focus bias value.
   Check that the C1 error is below 50 and ADER is below 2.
7. Press the ENTER/YES “R” button and display “ □□□□/□□ b = □□”.
   Check that the C1 error is below 220 and ADER is below 2.
8. Press the ENTER/YES “R” button and display “ □□□□/□□ a = □□”.
   Check that the C1 error is below 220 and ADER is below 2
9. Press the MENU/NO “R” button, next press the ⏏ (MD) button, and remove the test disc.

Note 1 : If the C1 error and ADER are above other than the specified value at points a (step 8. in the above) or b (step 7. in the above), the focus bias adjustment may not have been carried out properly. Adjust perform the beginning again.

5-15. AUTO GAIN CONTROL OUTPUT LEVEL ADJUSTMENT

Be sure to perform this adjustment when the pickup is replaced.
If the adjustment results becomes “Adjust NG!”, the pickup may be faulty or the servo system circuits may be abnormal.

5-15-1. CD Auto Gain Control Output Level Adjustment

Adjusting Procedure :

1. Insert the check disc (MD) TDYS-1.
2. Press the ⏮◀◀/MD/CD/TUNING – button or ▶▶⏭/MD/CD/TUNING + button to display “AG Set (CD)”.
3. When the ENTER/YES “R” button is pressed, the adjustment will be performed automatically.
   “Complete!!” will then be displayed momentarily when the value is recorded in the non-volatile memory, after which the display changes to “AG Set (CD)”.
4. Press the ⏏ (MD) button to remove the disc.

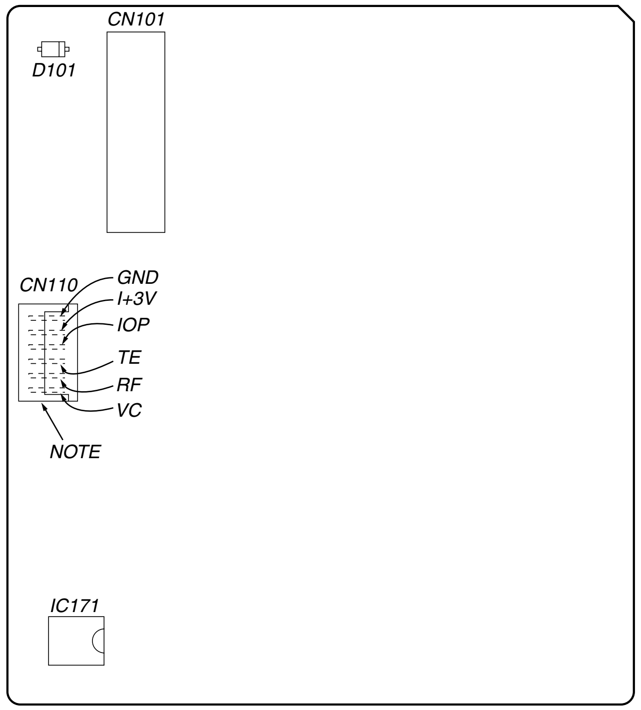
5-15-2. MO Auto Gain Control Output Level Adjustment

Adjusting Procedure :

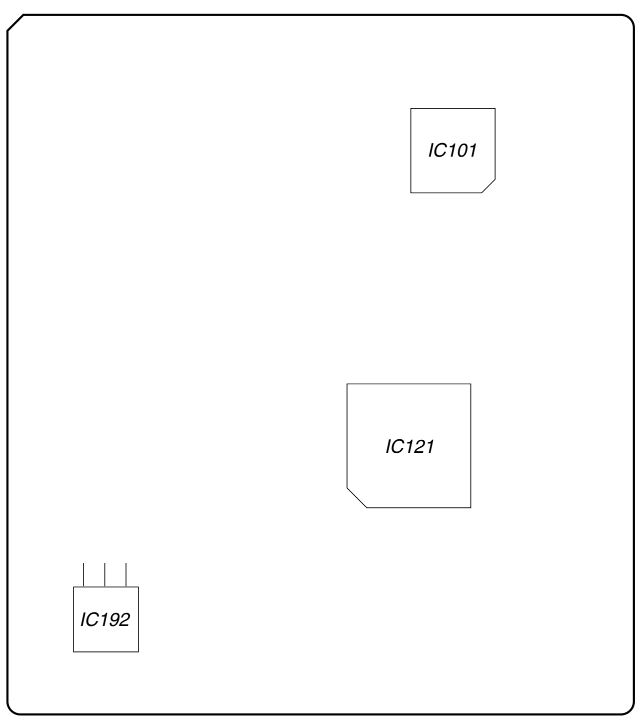
1. Insert the reference disc (MDW-74/AU-1) for recording.
2. Press the ⏮◀◀/MD/CD/TUNING – button to display “AG Set (MO)”.
3. When the ENTER/YES “R” button is pressed, the adjustment will be performed automatically.
   “Complete!!” will then be displayed momentarily when the value is recorded in the non-volatile memory, after which the display changes to “AG Set (MO)”.
4. Press the ⏏ (MD) button to remove the disc.

5-15. ADJUSTING POINTS AND CONNECTING POINTS

[BD (MD) BOARD] (SIDE A)



[BD (MD) BOARD] (SIDE B)

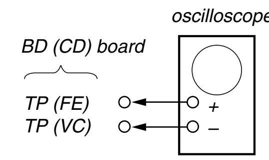


NOTE: It is useful to use the jig. for checking the waveform. (Refer to Servicing Note on page 11.)

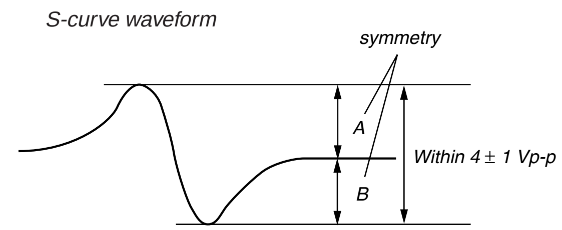
CD SECTION

Note:
1. CD Block is basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :
1. Connect the oscilloscope to test points TP (FE) and TP (VC).
2. Connect TP (FEI) and Ground, and TP (AGCCON) and Ground of the BD board with lead wires.
3. Press the I/⏻ button to turn the set ON.
4. With the disc (YEDS-18) loaded, press the ▶II (CD) button and perform focus search. (Focus search will be performed in the same way even while the disc table is pushed in and out.)
5. Check the symmetry and peak to peak level of the oscilloscope waveform (S curve) at this time.

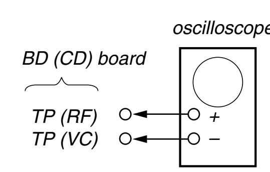


6. After check, remove the lead wire connected in step 2.

Note:
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

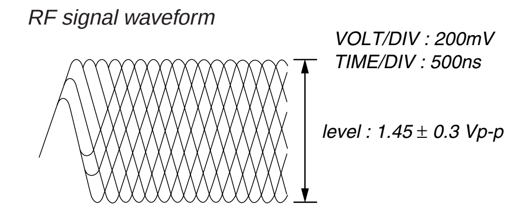
Checking Location : BD (CD) board

RF Level Check



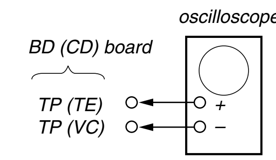
Procedure :
1. Connect oscilloscope to test point TP (RF) and TP (VC) on BD board.
2. Connect TP (AGCCON) and Ground of the BD (CD) board with lead wires.
3. Press the I/⏻ button to turn the set ON.
4. Put disc (YEDS-18) in and playback 5track.
5. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
6. After check, remove the lead wire connected in step 2.

Note: Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.



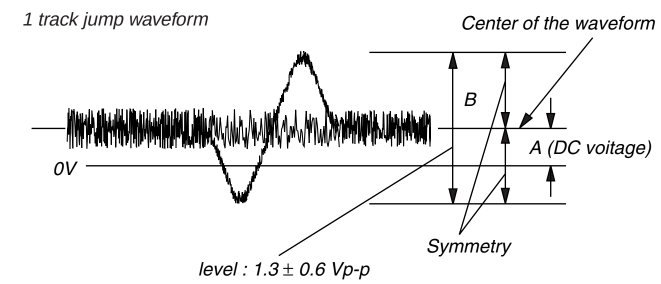
Checking Location : BD (CD) board

E-F Balance (1 Track Jump) check



Procedure:
1. Connect oscilloscope to test point TP (TE) and TP (VC) on BD (CD) board.
2. Press the I/⏻ button to turn the unit ON.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the ▶II (CD) button.
5. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform. Confirm the following:

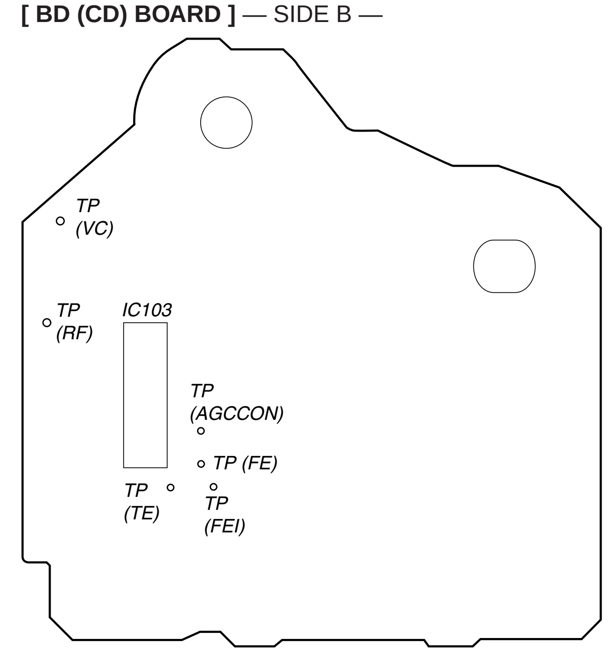
- A/B x 100 = less then ± 22 (%)
- B = 1.3 ± 0.6 Vp-p



Checking Location : BD (CD) board

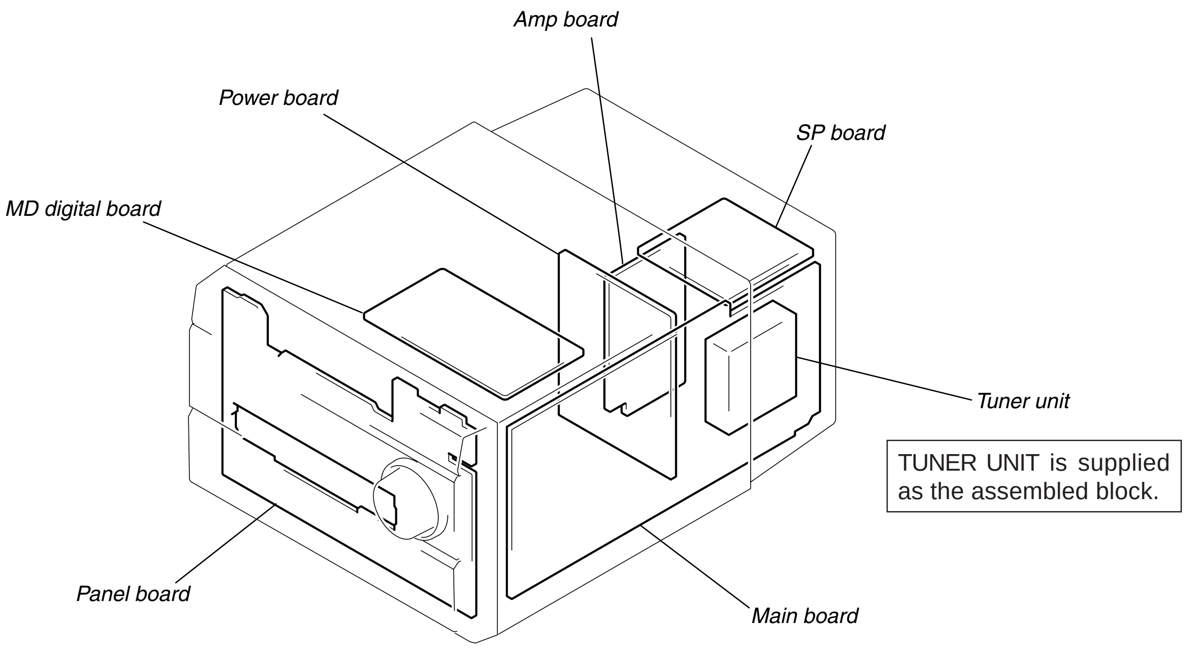
Checking Location : BD (CD) board

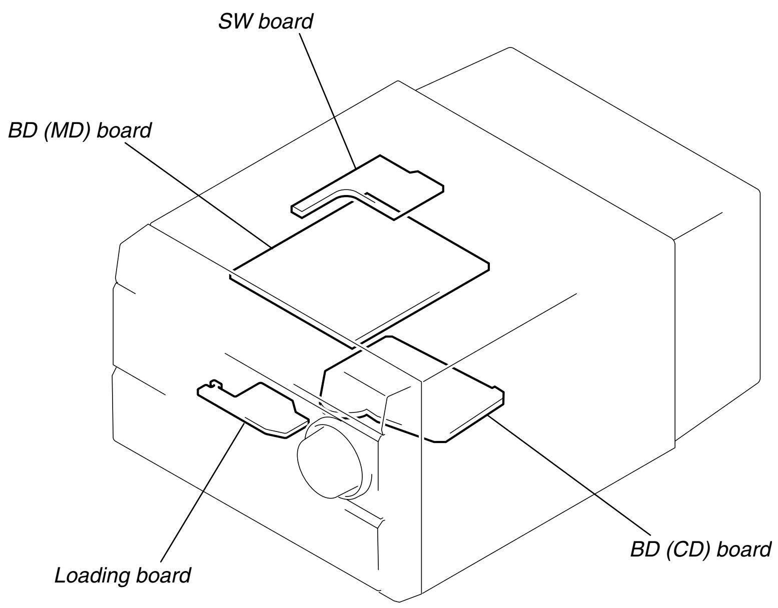
[BD (CD) BOARD] — SIDE B —



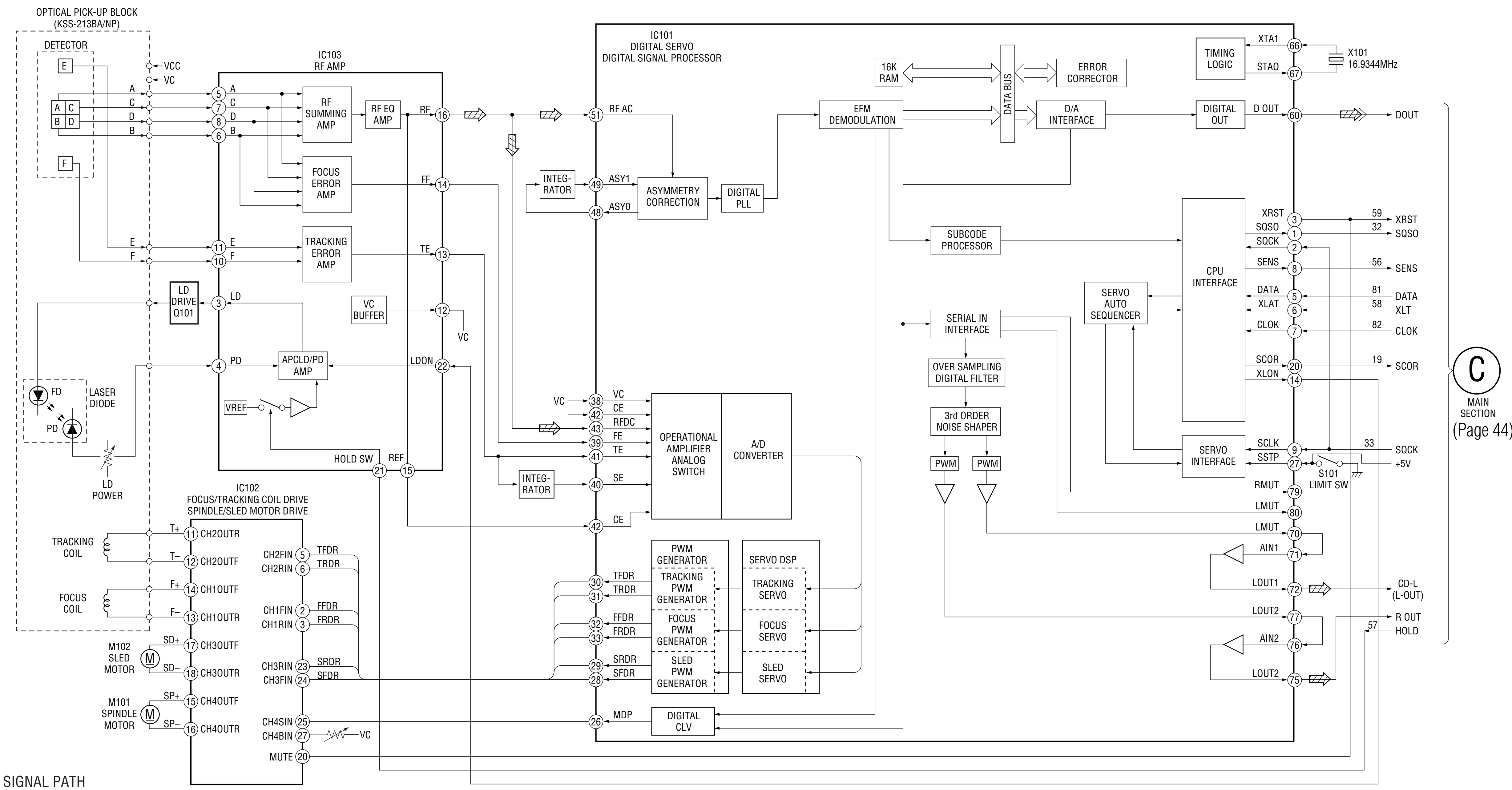
SECTION 6
DIAGRAMS

6-1. CIRCUIT BOARDS LOCATION





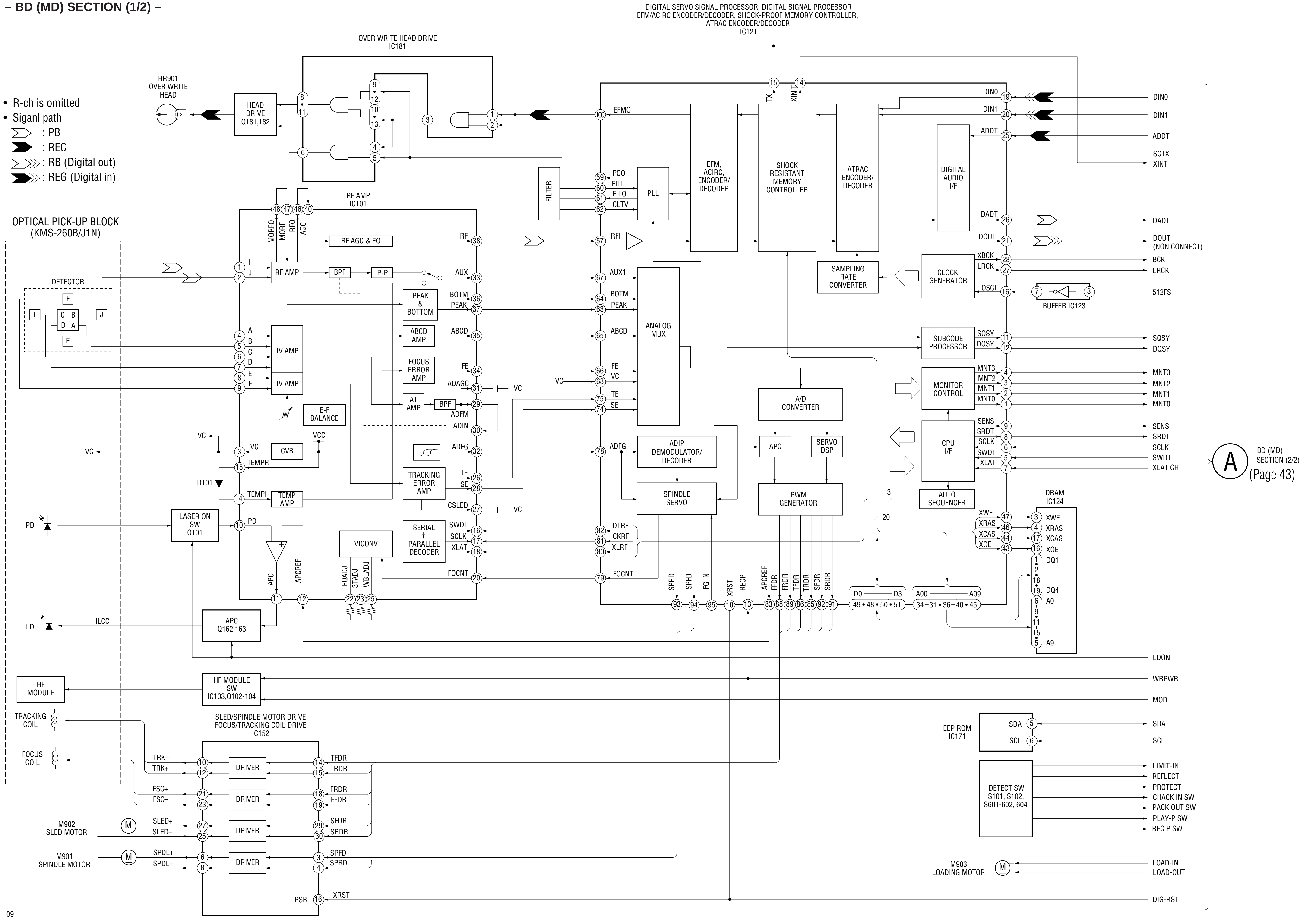
6-2. BLOCK DIAGRAMS
– BD (CD) SECTION –



• SIGNAL PATH
: CD
: CD (Digital out)

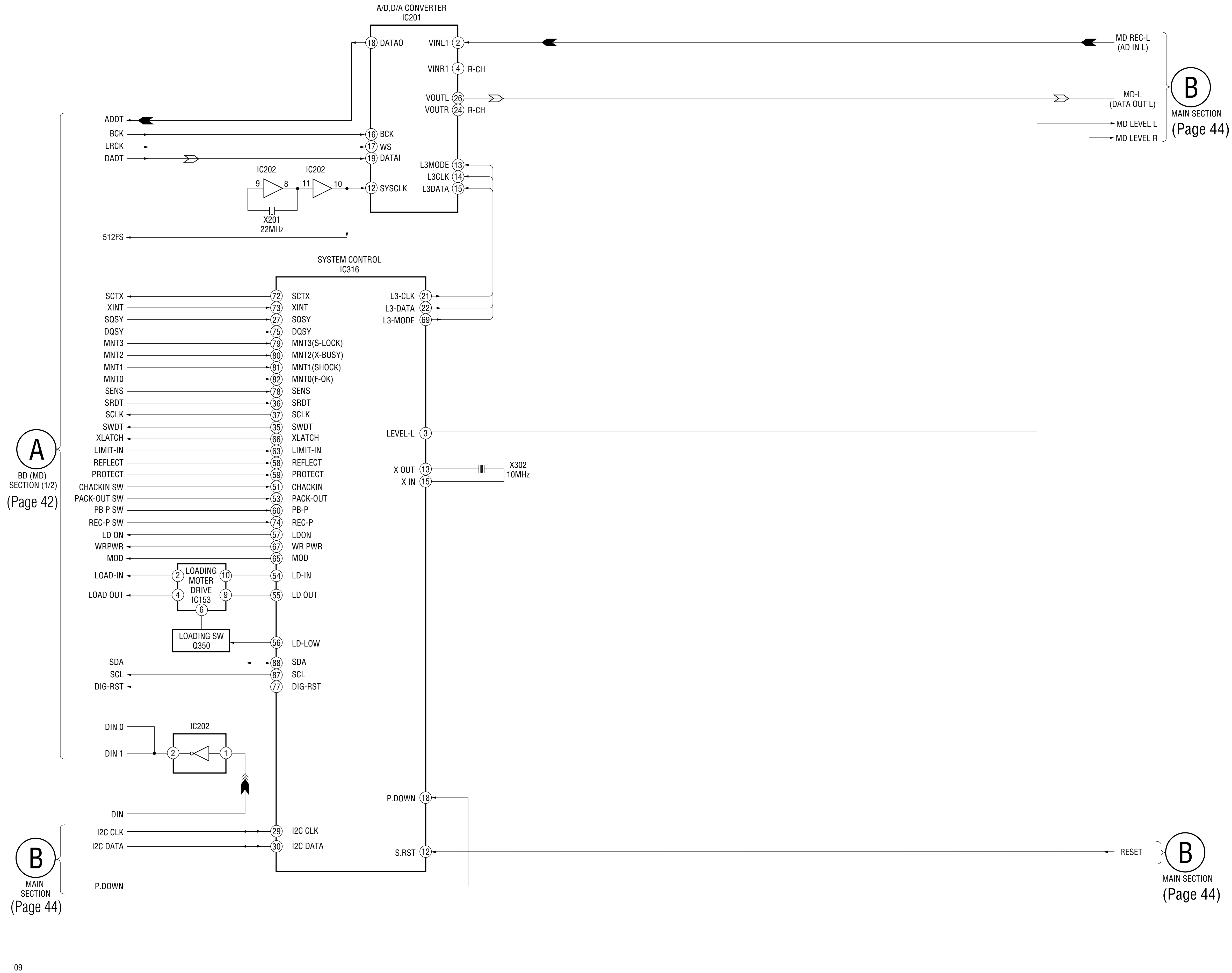
09

– BD (MD) SECTION (1/2) –

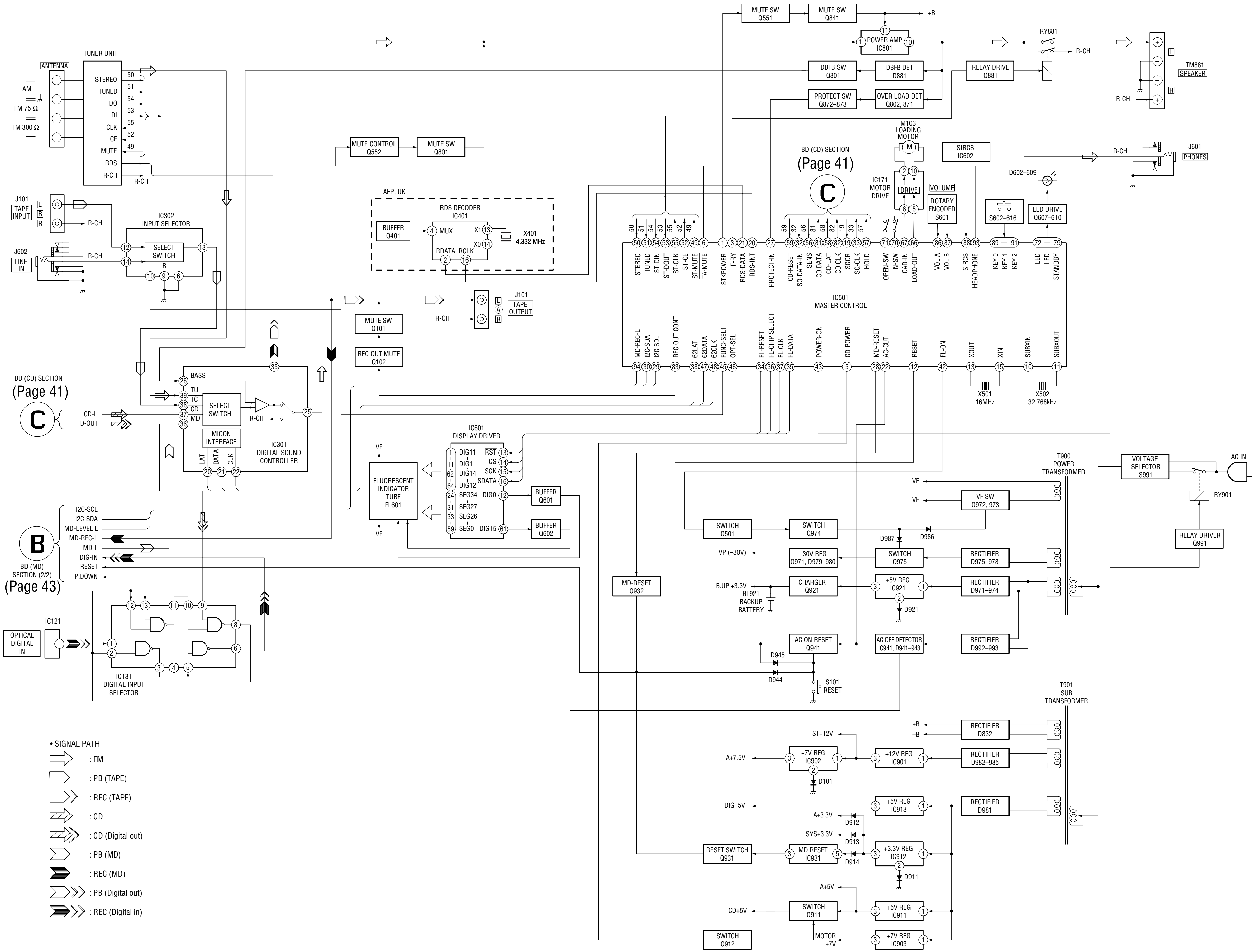


09

– BD (MD) SECTION (2/2) –



– MAIN SECTION –



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For schematic diagrams.
Note:
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^{1}/_{4}$ W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

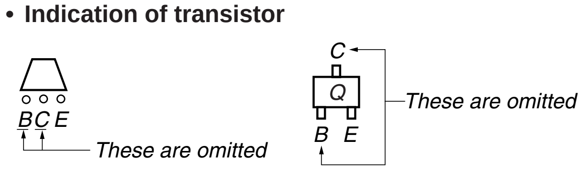
> **Note:**
> The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
> Replace only with part number specified.
>
> 以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

- B+ : B+ Line.
- B– : B– Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - : FM
  - : PB (TAPE)
  - : PB (TAPE)
  - : REC (DECK B)
  - : CD
  - : CD (digital out)
  - : PB (MD)
  - : REC (MD)
  - : PB (digital out)
  - : REC (dihgital in)
- Abbreviation
  - AUS : Australian model.
  - SP : Singapore model..
  - MY : Malaysia model.
  - JE : Tourist model.
  - HK : Hong Kong model.
  - AR : Argentine model.
  - CH :Chinese model.
  - KR : korea model.

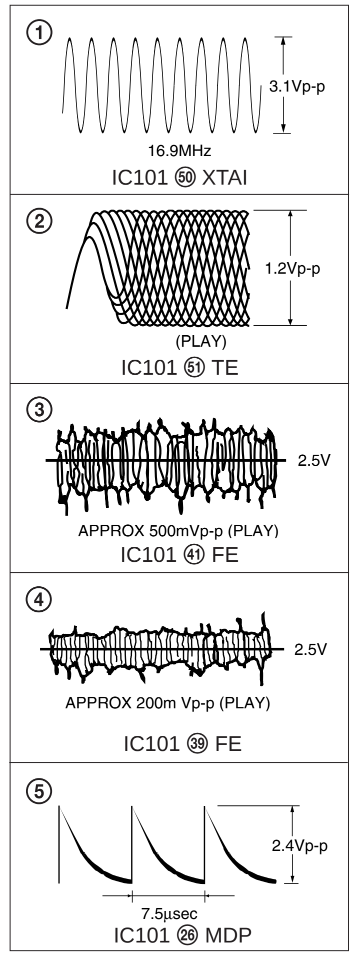
For printed wiring boards.
Note:
- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ░ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

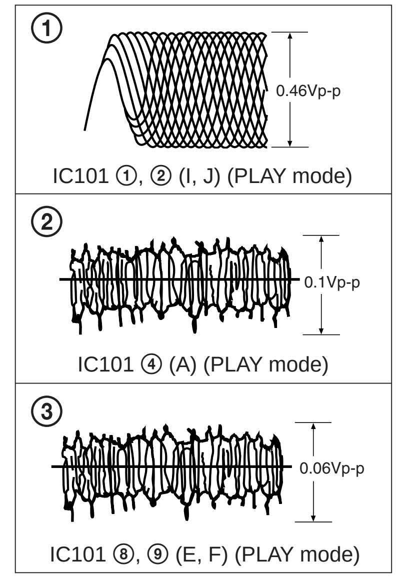
- **Indication of transistor**



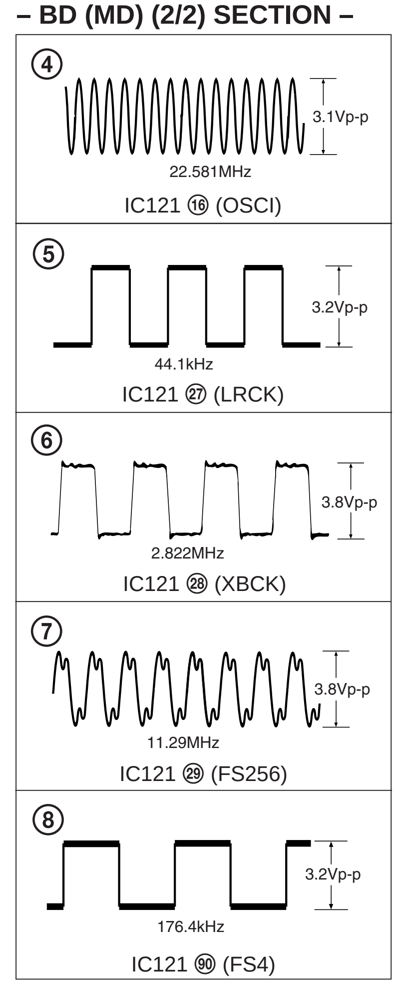
WAVEFORMS
– BD (CD) SECTION –



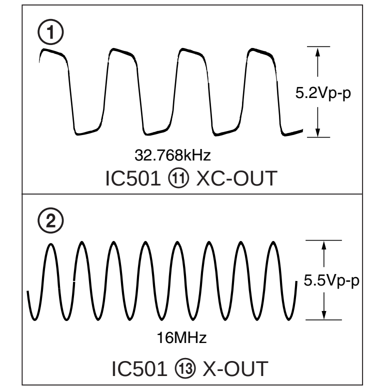
– BD (MD) (1/2) SECTION –



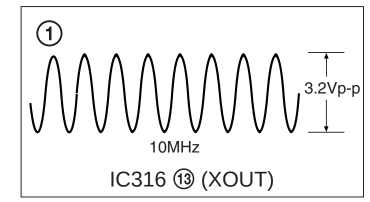
– BD (MD) (2/2) SECTION –



– MAIN (3/3) SECTION –

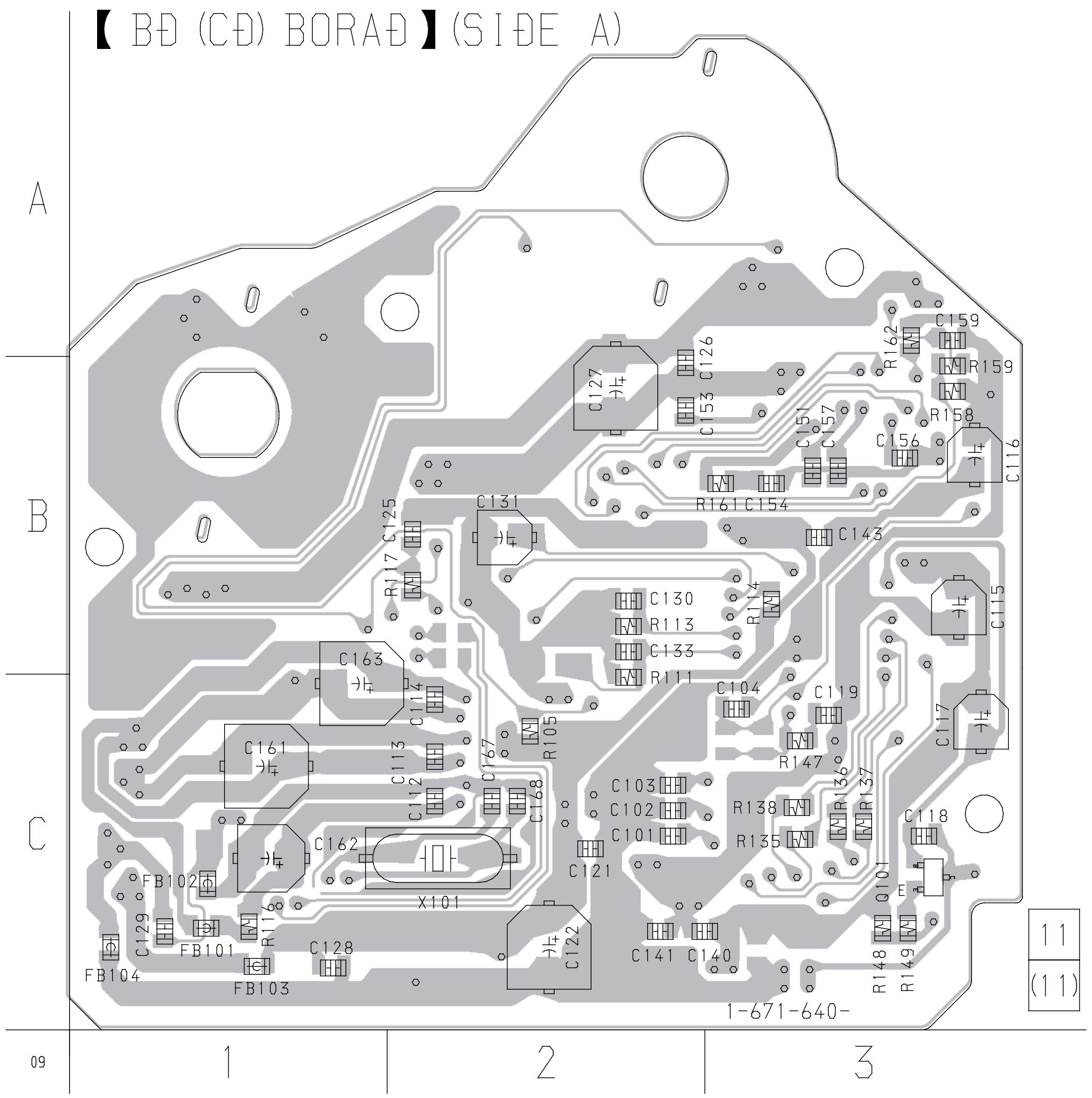


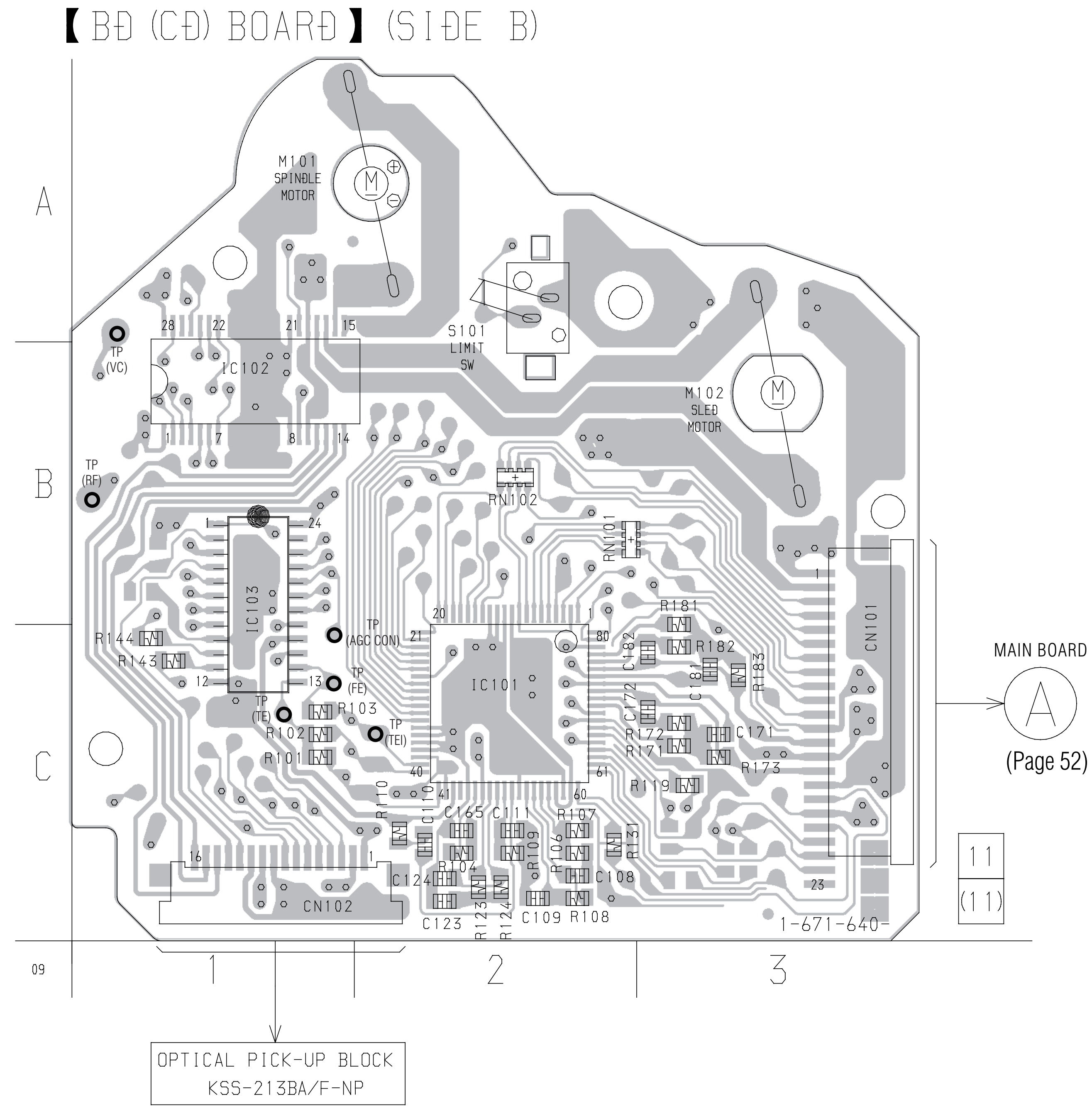
– MD DIGITAL SECTION –



6-3. PRINTED WIRING BOARD – BD (CD) SECTION –

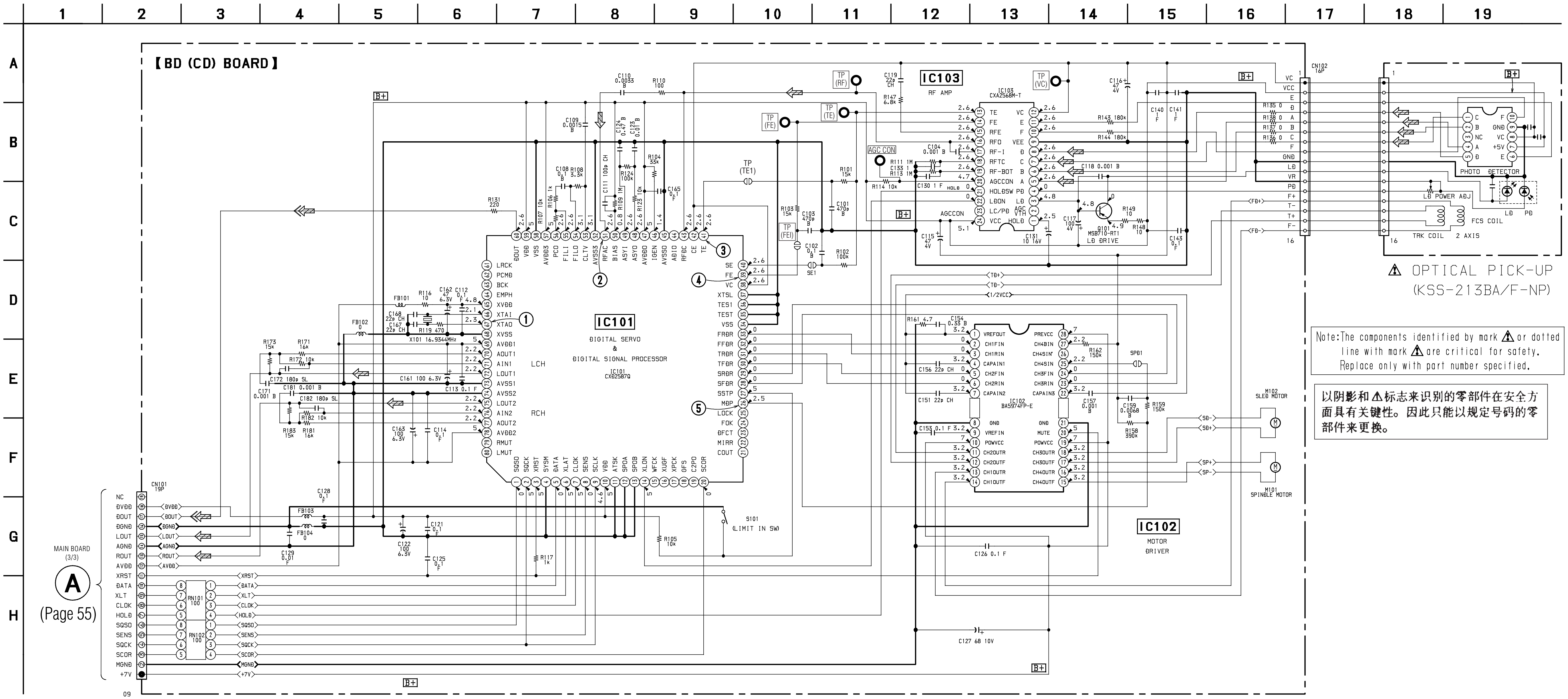
• See page 40 for Circuit Boards Location.





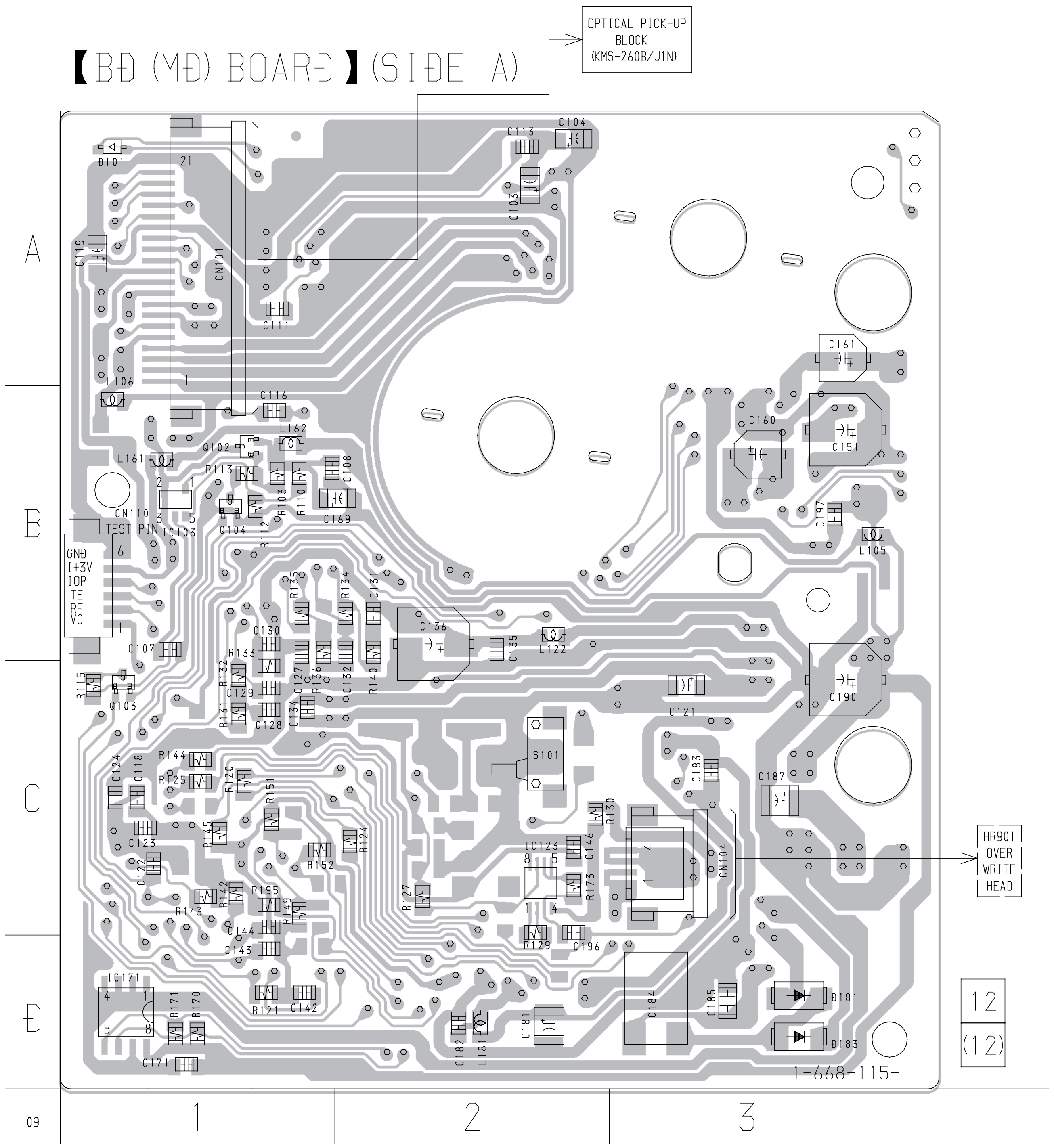
6-4. SCHEMATIC DIAGRAM – BD (CD) SECTION –

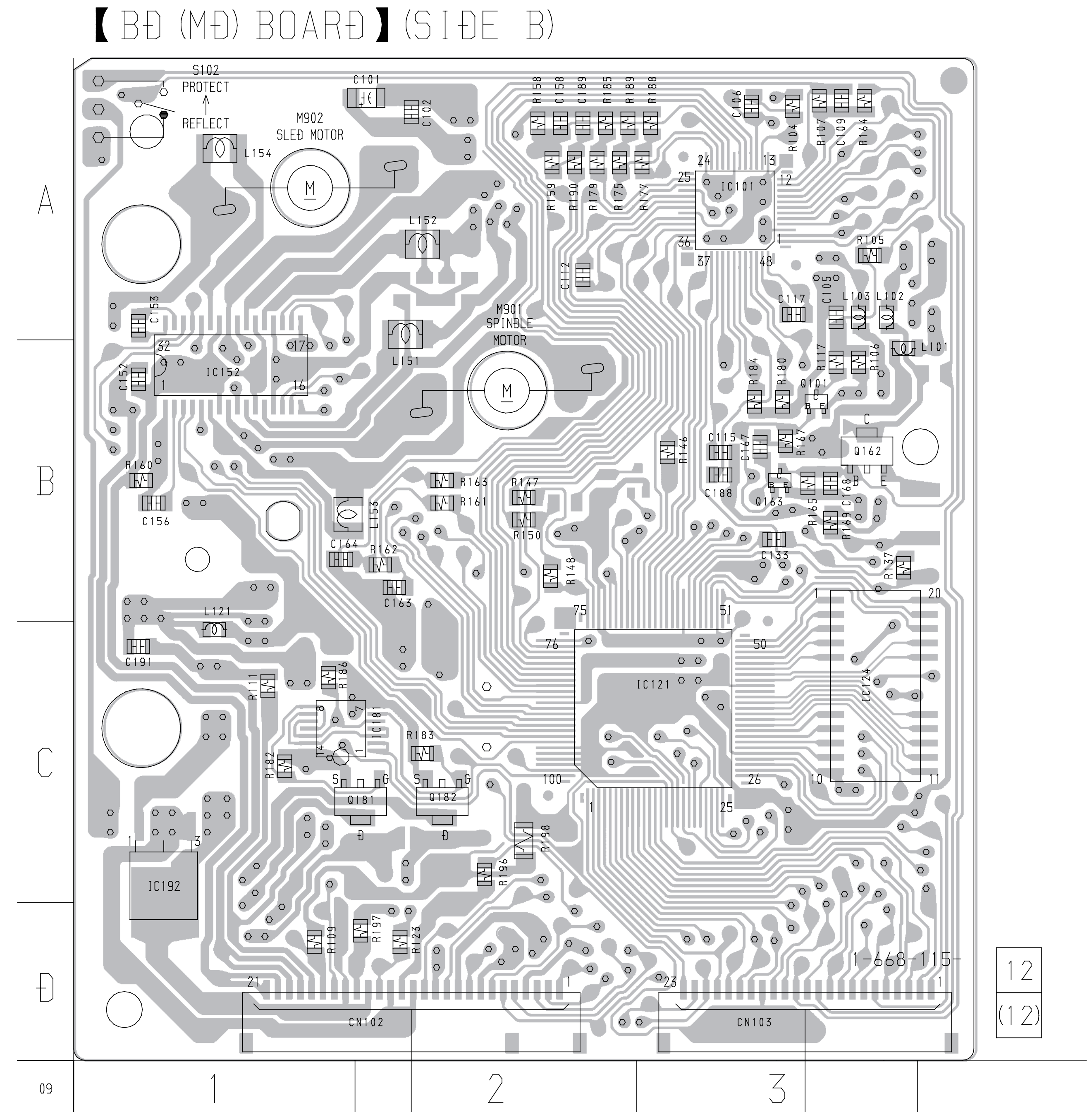
• See page 45 for Waveforms.
• See page 67 for IC Block Diagrams.
• See page 69 for IC Pin Functions.

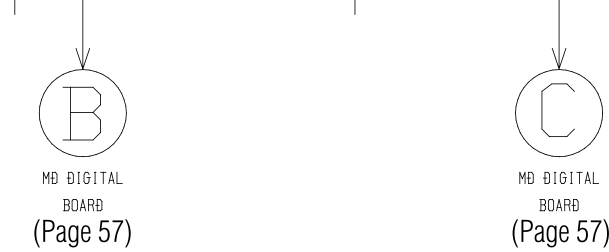


6-5. PRINTED WIRING BOARD – BD (MD) SECTION –

• See page 40 for Circuit Boards Location.







• **Semiconductor Location** (Side A)

Ref. No.	Location
D101	A-1
D181	D-3
D183	D-3
IC103	B-1
IC123	D-2
IC171	D-1
Q102	B-1
Q103	C-1
Q104	B-1

• **Semiconductor Location** (Side B)

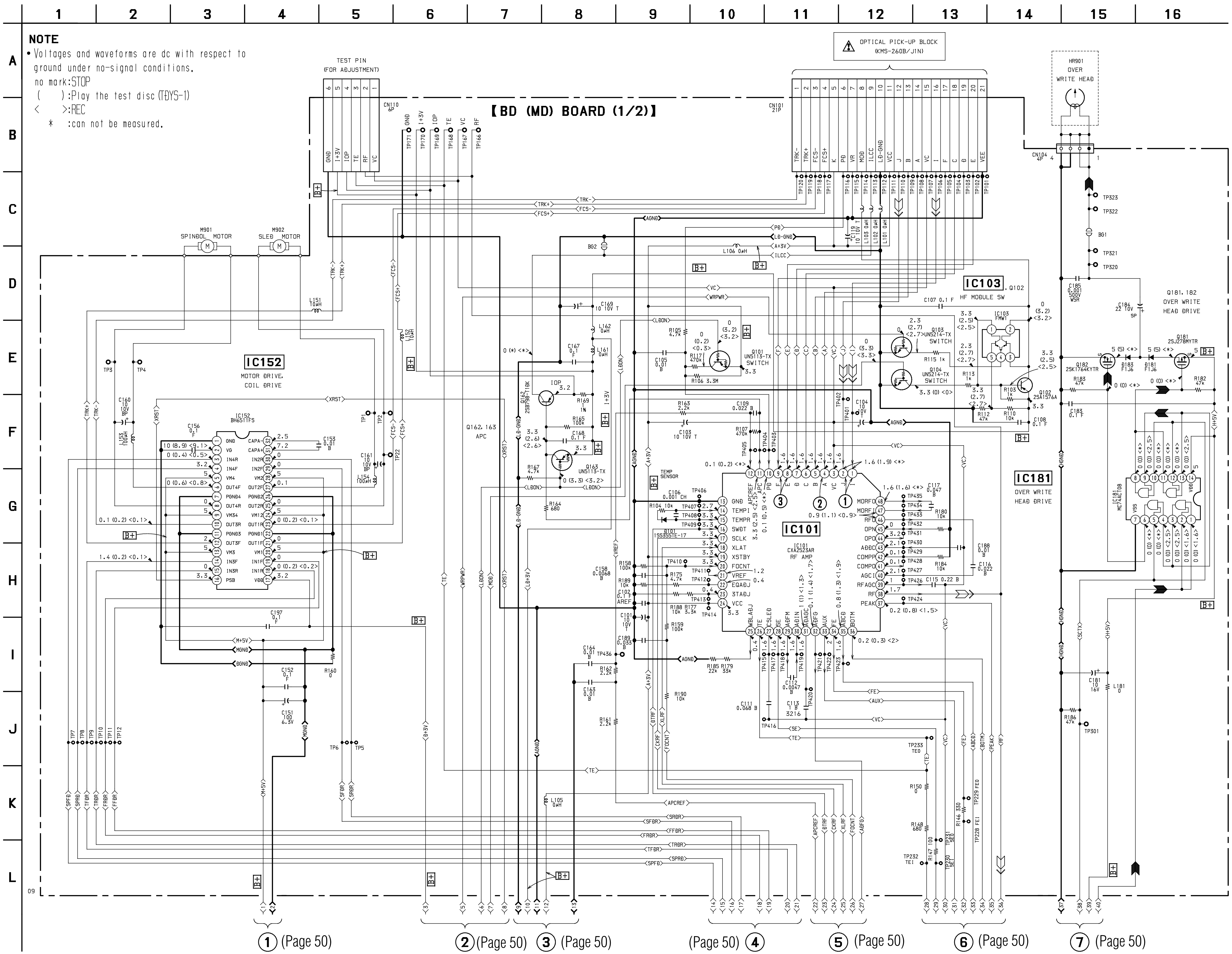
Ref. No.	Location
IC101	A-3
IC121	C-3
IC124	C-3
IC152	B-1
IC181	C-1
IC192	C-1
Q101	B-3
Q162	B-3
Q163	B-3
Q181	C-2
Q182	C-2

6-6. SCHEMATIC DIAGRAM – BD (MD) SECTION (1/2) –

- See page 45 for Waveforms.
- See page 65 for IC Block Diagrams.
- See page 71 for IC Pin Functions.

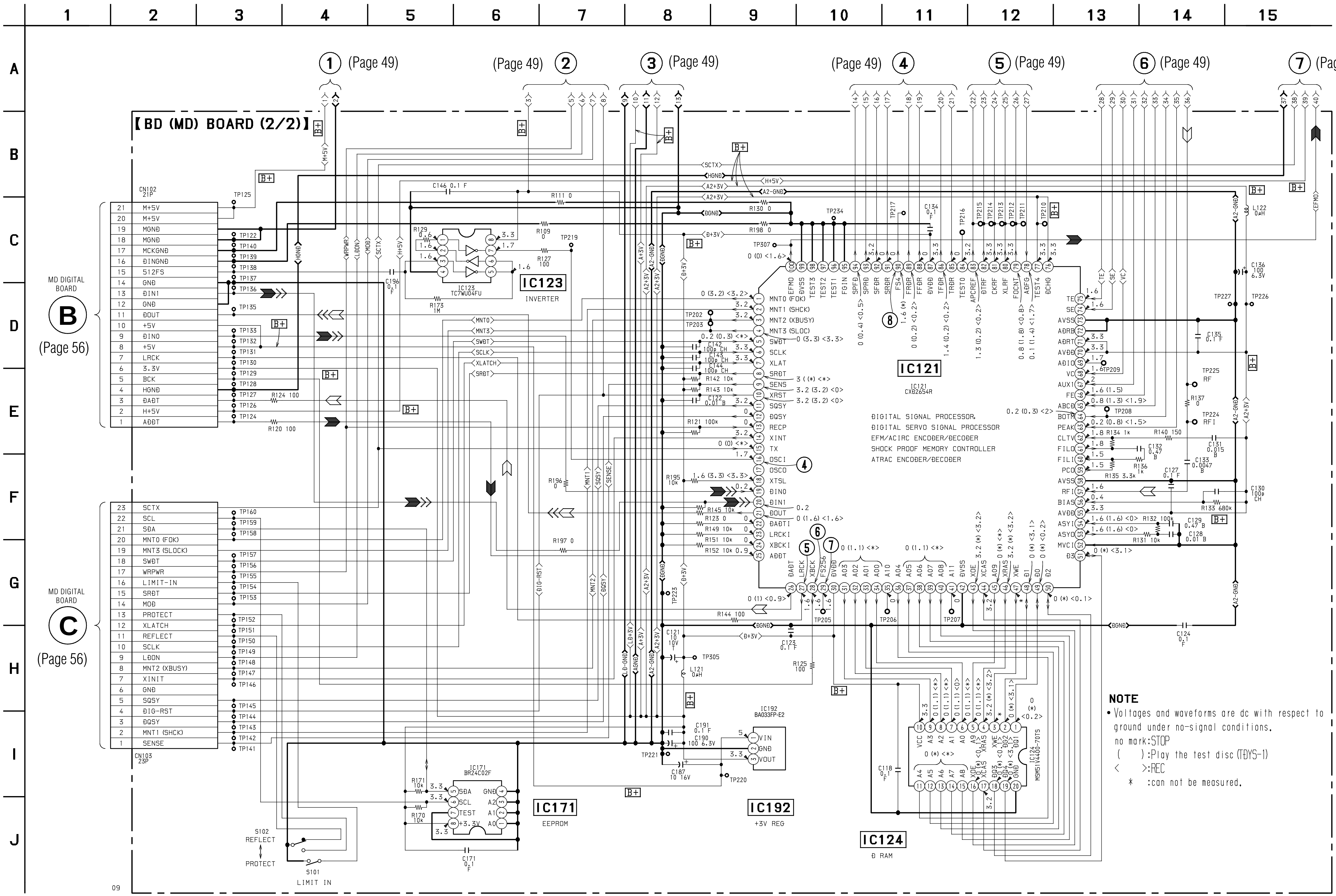
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。



6-7. SCHEMATIC DIAGRAM – BD (MD) SECTION (2/2) –

- See page 45 for Waveforms.
- See page 48 for Printed Wiring Board.
- See page 66 for IC Block Diagrams.



NOTE

- Voltages and waveforms are dc with respect to ground under no-signal conditions.

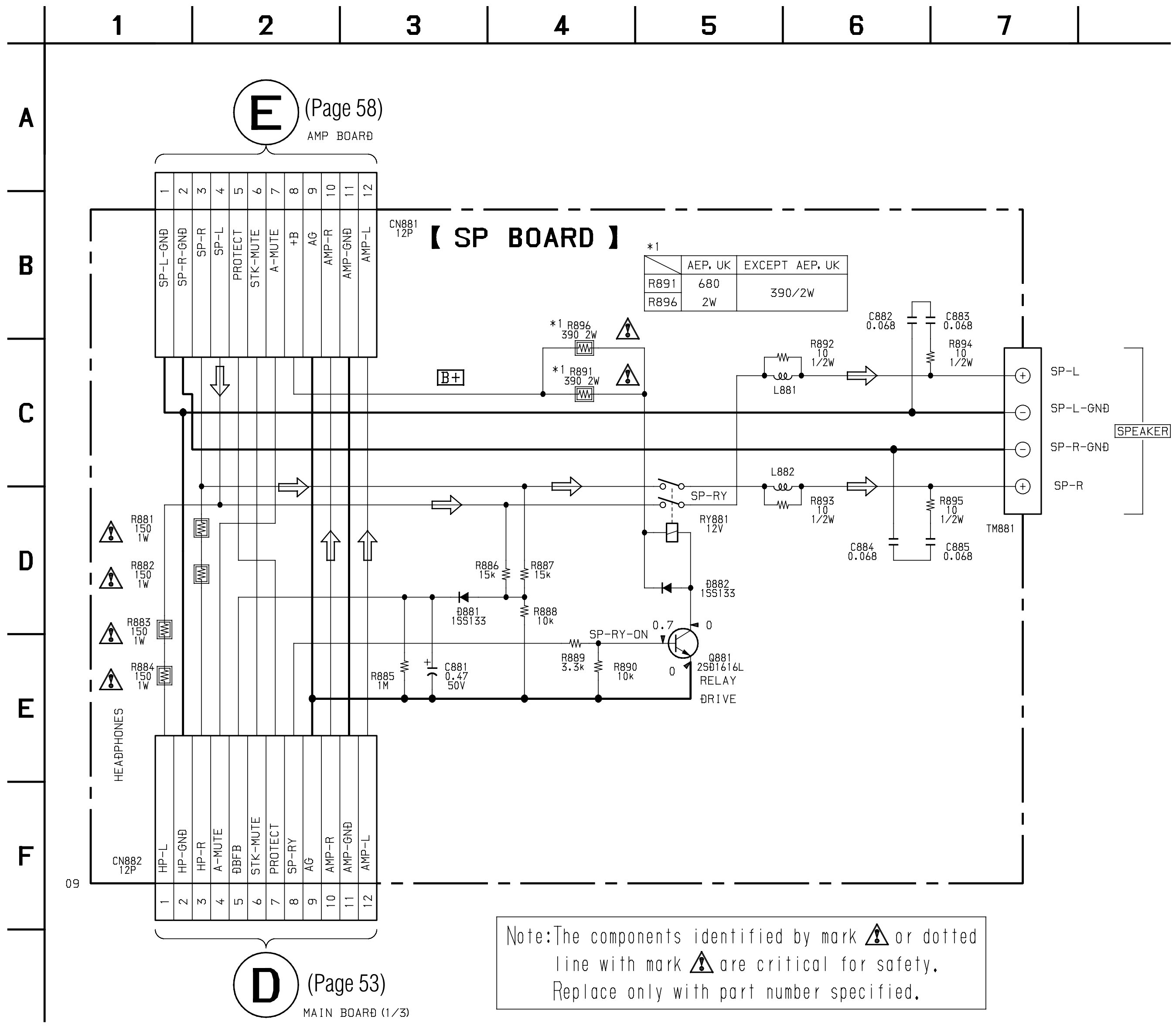
no mark:STOP

( ):Play the test disc (TDYS-1)

< >:REC

* :can not be measured.

6-8. SCHEMATIC DIAGRAM – SP SECTION –

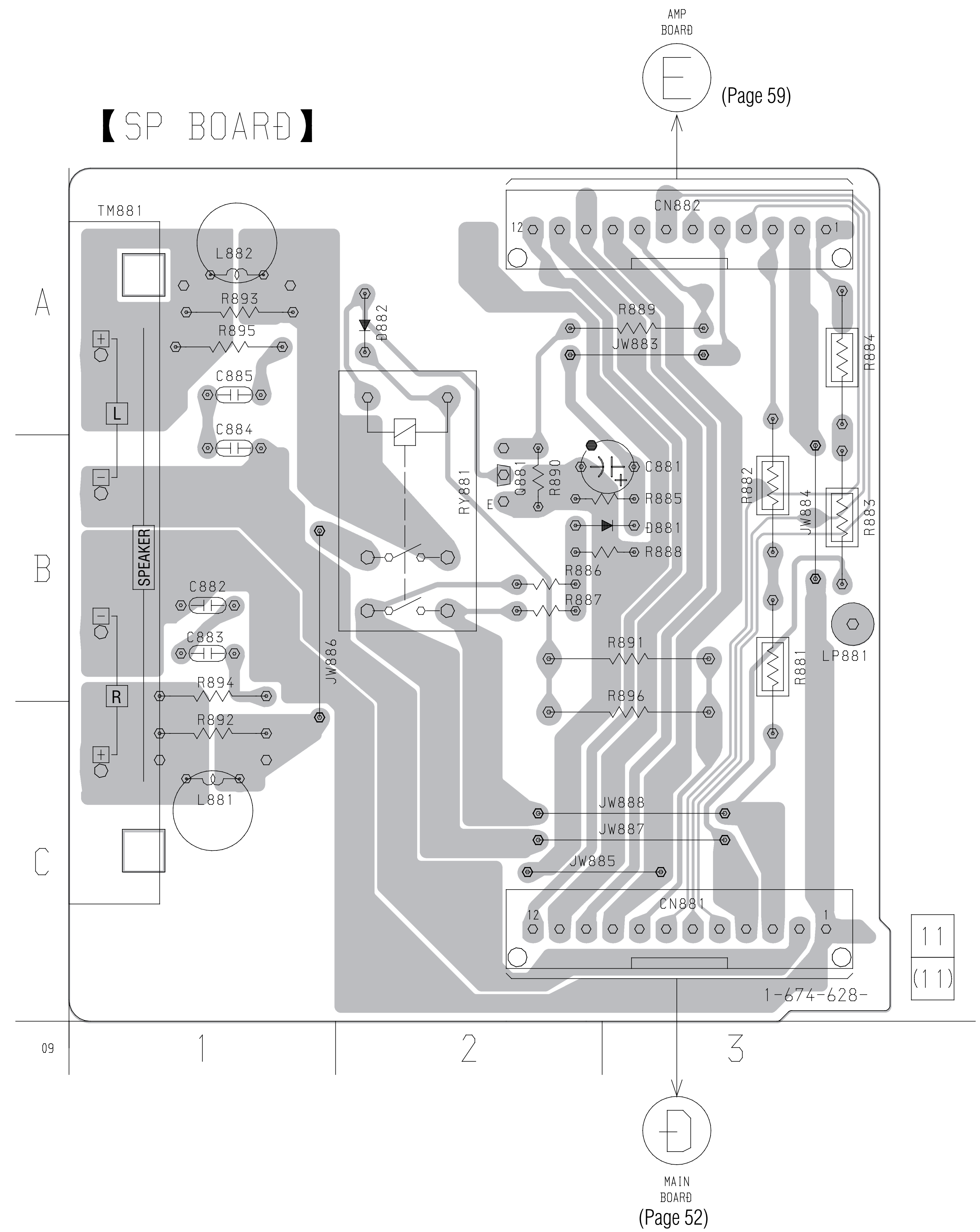


Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

以附影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

6-9. PRINTED WIRING BOARD – SP SECTION –

• See page 40 for Circuit Boards Location.

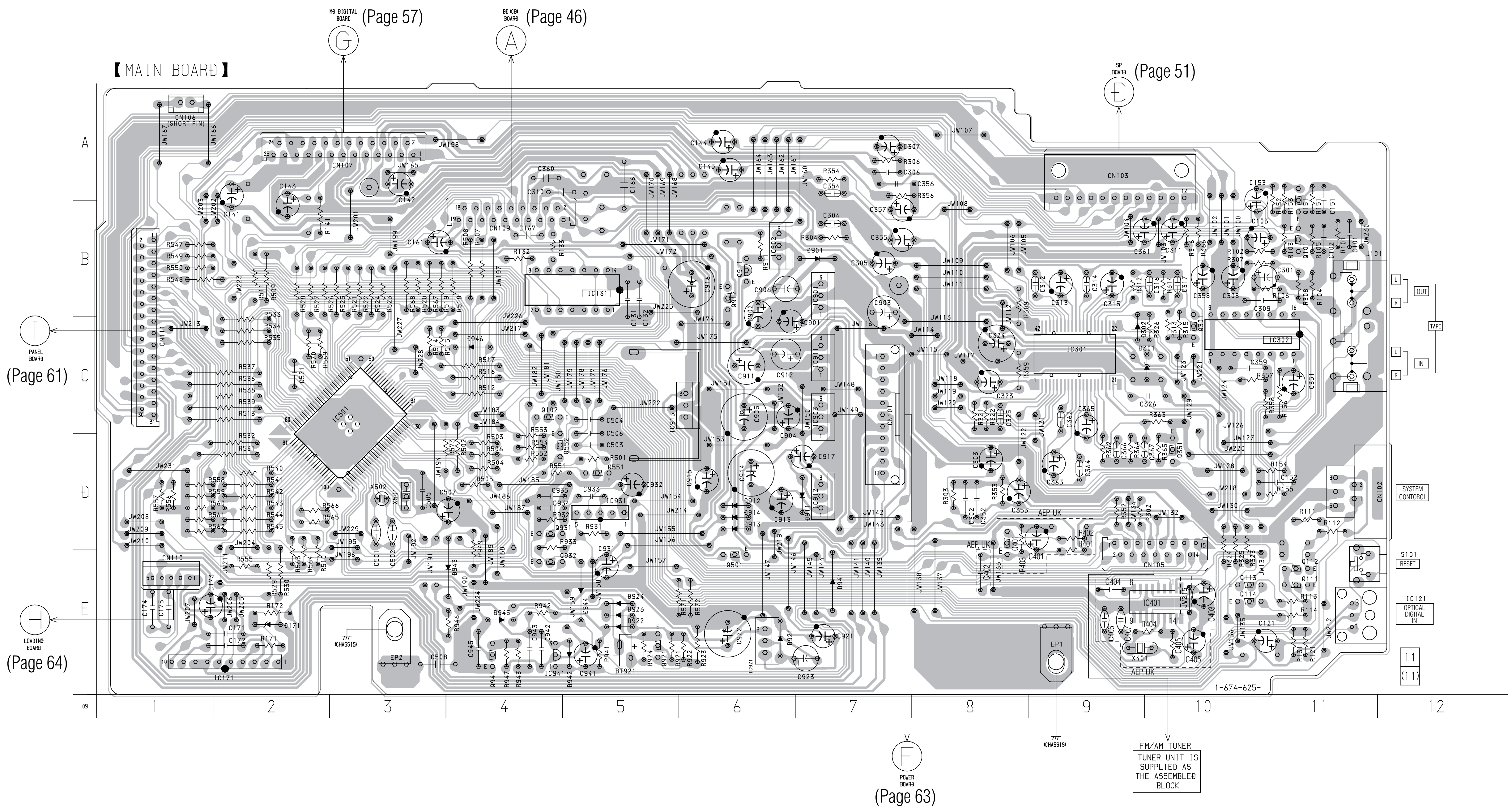


6-10. PRINTED WIRING BOARD – MAIN SECTION –

• See page 40 for Circuit Boards Location.

• Semiconductor Location

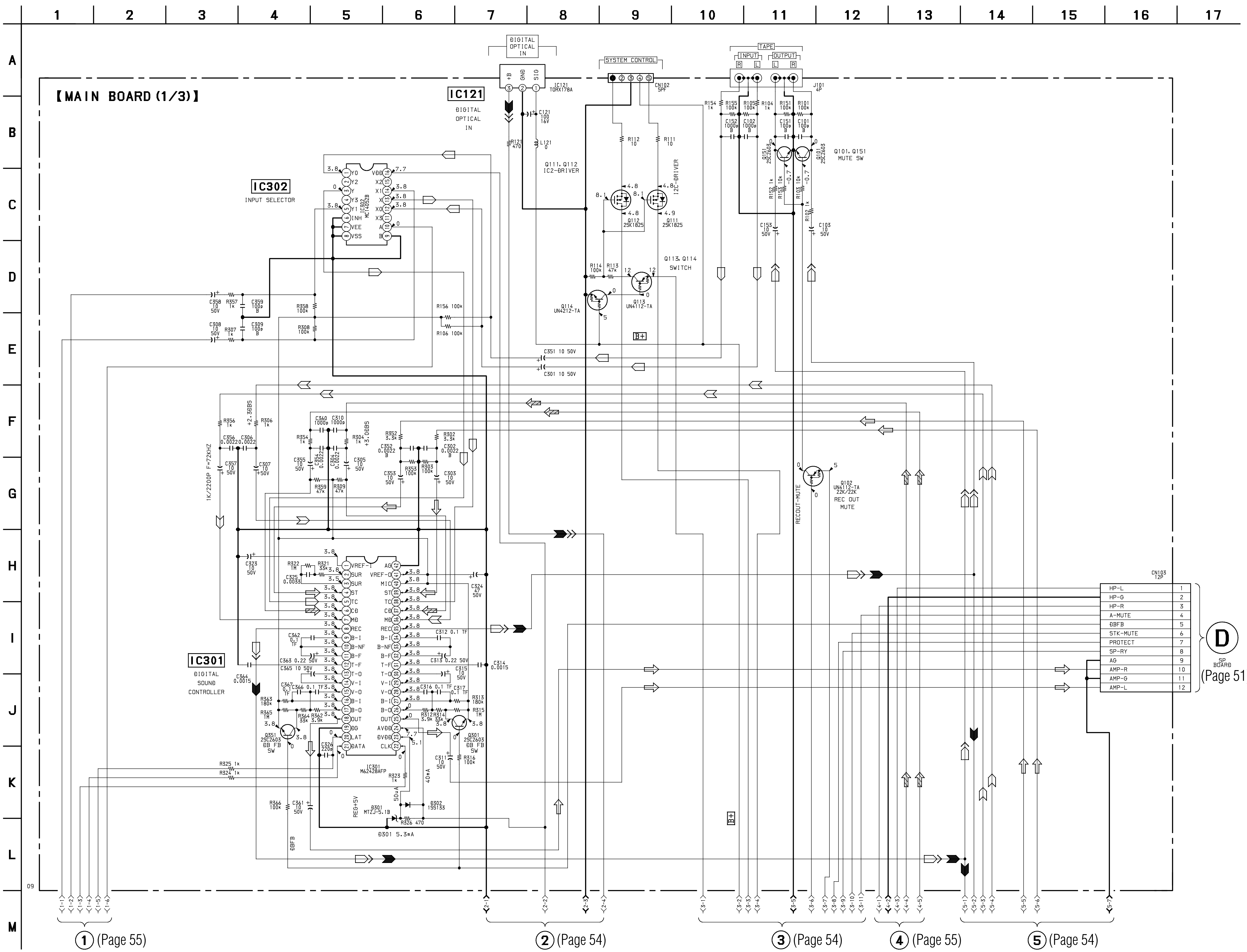
Ref. No.	Location
D171	E-2
D301	C-10
D302	C-9
D901	B-7
D911	D-7
D912	D-6
D913	D-6
D914	D-6
D921	E-6
D922	E-5
D923	E-5
D924	E-5
D941	E-7
D942	E-5
D943	E-4
D944	E-5
D945	E-4
D946	C-4
IC121	E-11
IC131	B-4
IC171	E-1
IC301	C-9
IC302	C-10
IC501	C-3
IC901	B-7
IC902	B-6
IC903	C-7
IC911	C-7
IC912	D-7
IC913	C-6
IC921	E-6
IC931	D-5
IC941	E-4
Q101	B-11
Q102	C-4
Q111	E-11
Q112	E-11
Q113	E-10
Q114	E-10
Q151	B-11
Q301	C-10
Q351	D-10
Q501	E-6
Q551	D-5
Q552	D-4
Q911	B-6
Q912	B-6
Q921	E-5
Q931	D-4
Q932	E-4
Q941	E-4



 52

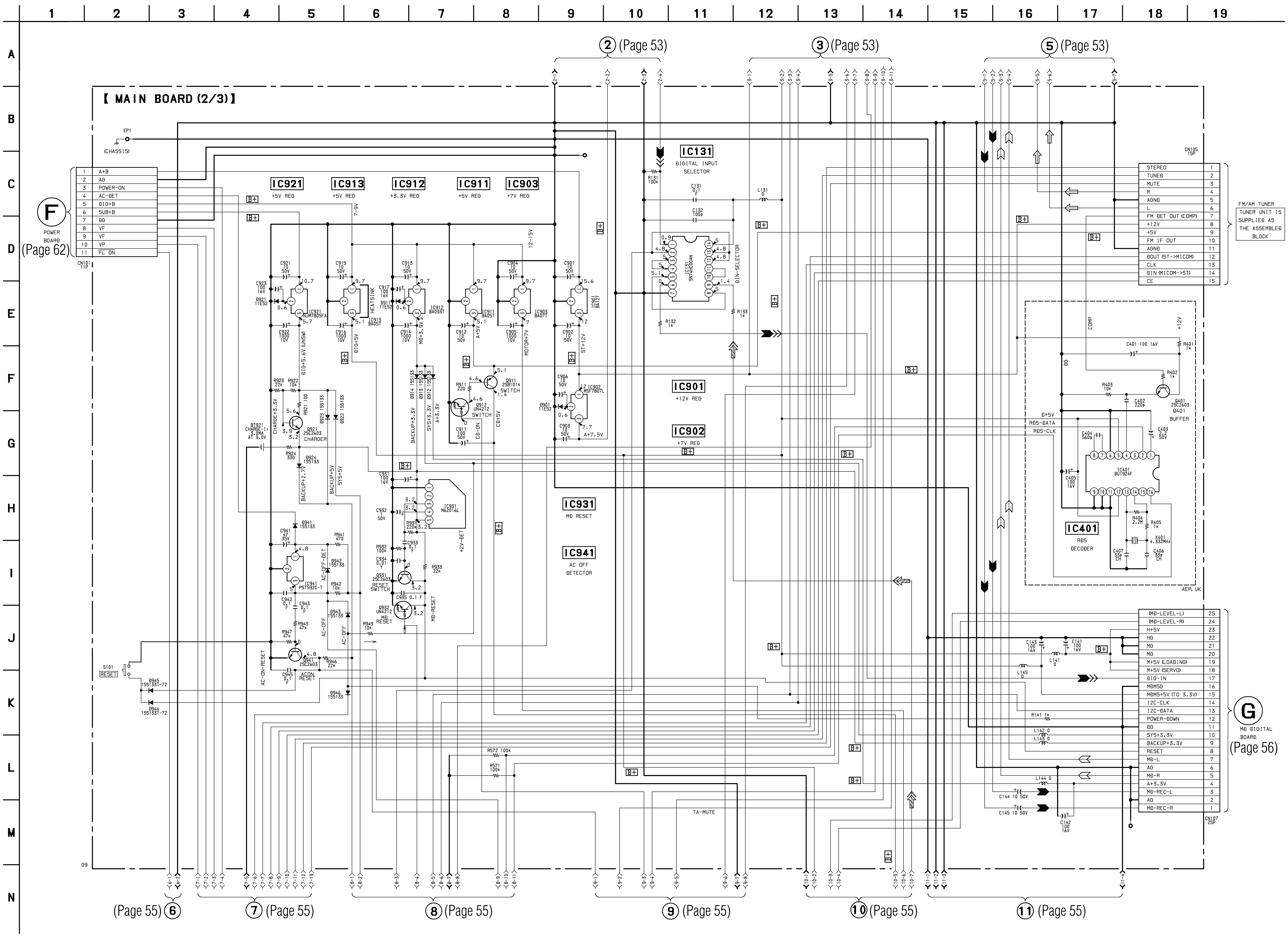
6-11. SCHEMATIC DIAGRAM – MAIN SECTION (1/3) –

• See page 68 for IC Block Diagrams.



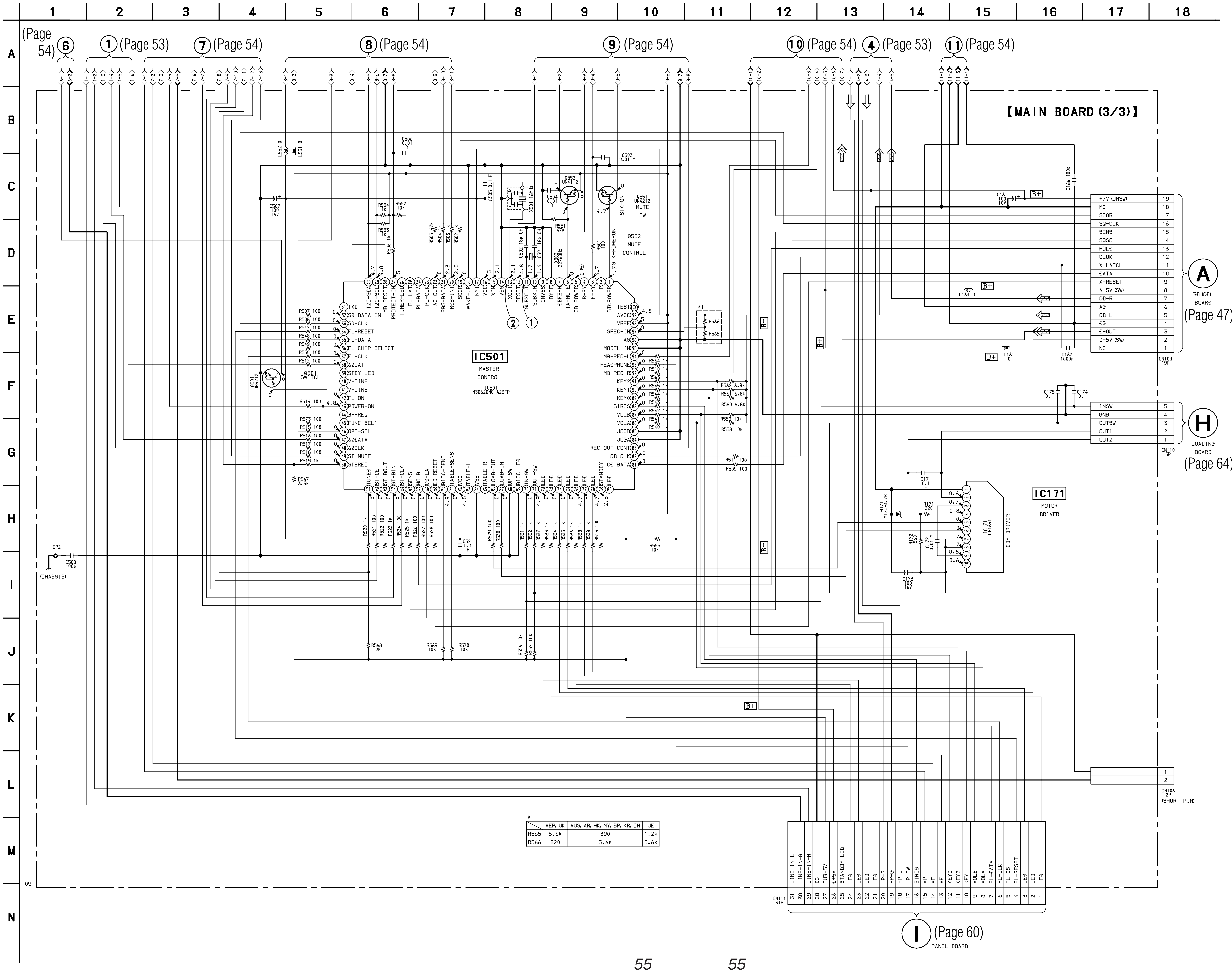
6-12. SCHEMATIC DIAGRAM – MAIN SECTION (2/3) –

• See page 52 for Printed Wiring Board.
• See page 68 for IC Block Diagrams.



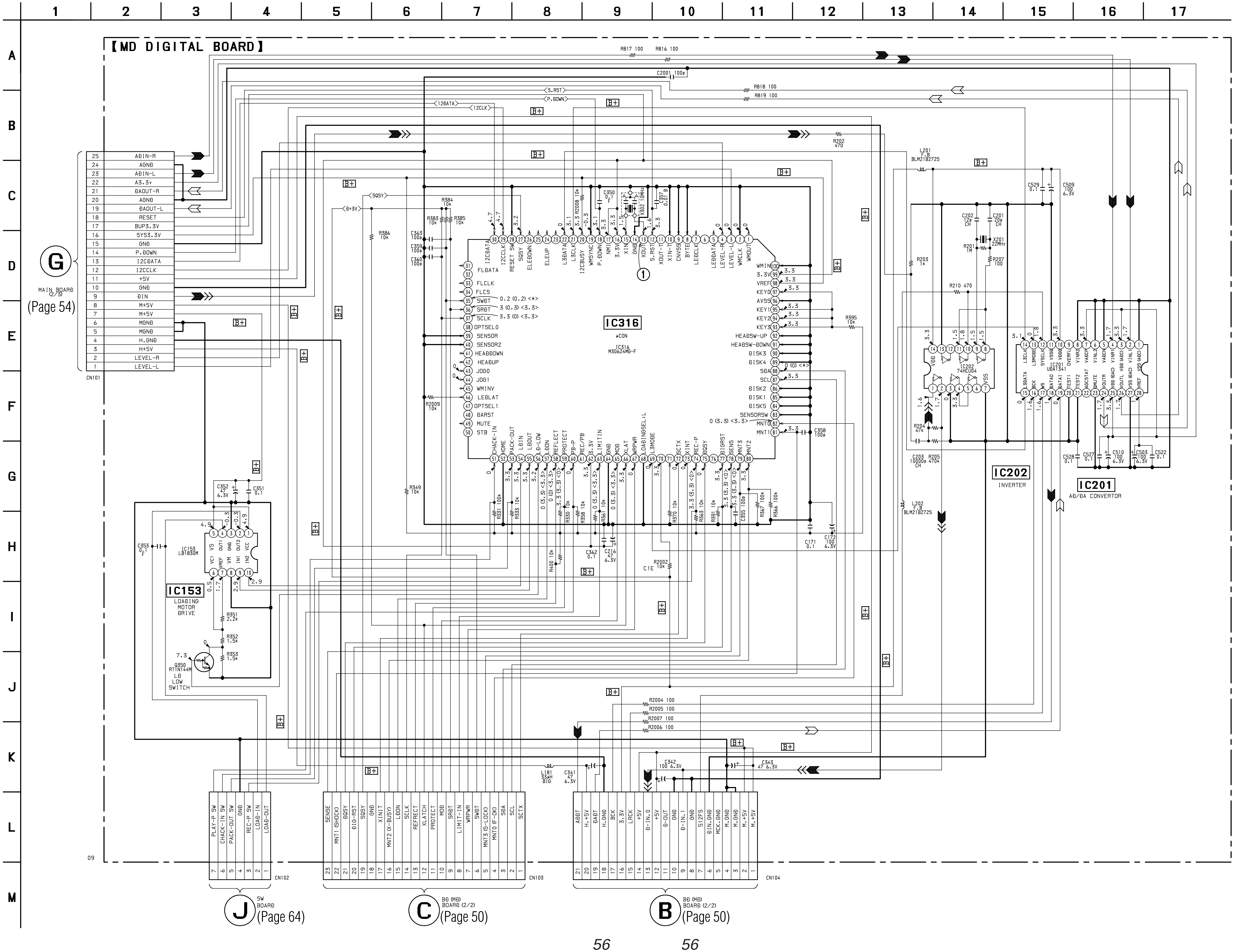
6-13. SCHEMATIC DIAGRAM – MAIN SECTION (3/3) –

- See page 45 for Waveforms.
- See page 52 for Printed Wiring Board.
- See page 68 for IC Block Diagrams.
- See page 75 for IC Pin Functions.



6-14. SCHEMATIC DIAGRAM – MD DIGITAL SECTION –

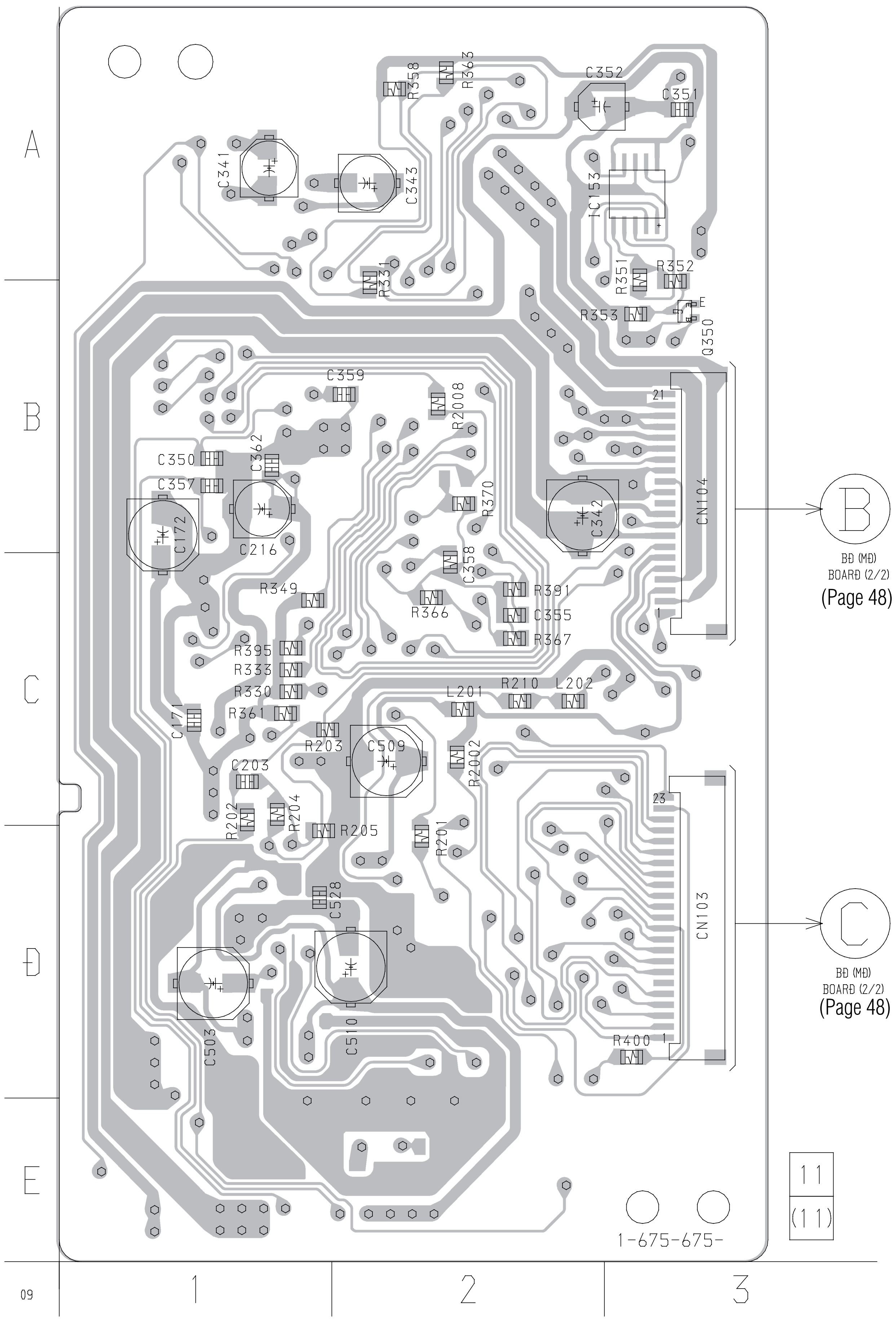
• See page 45 for Waveforms.
• See page 67 for IC Block Diagrams.



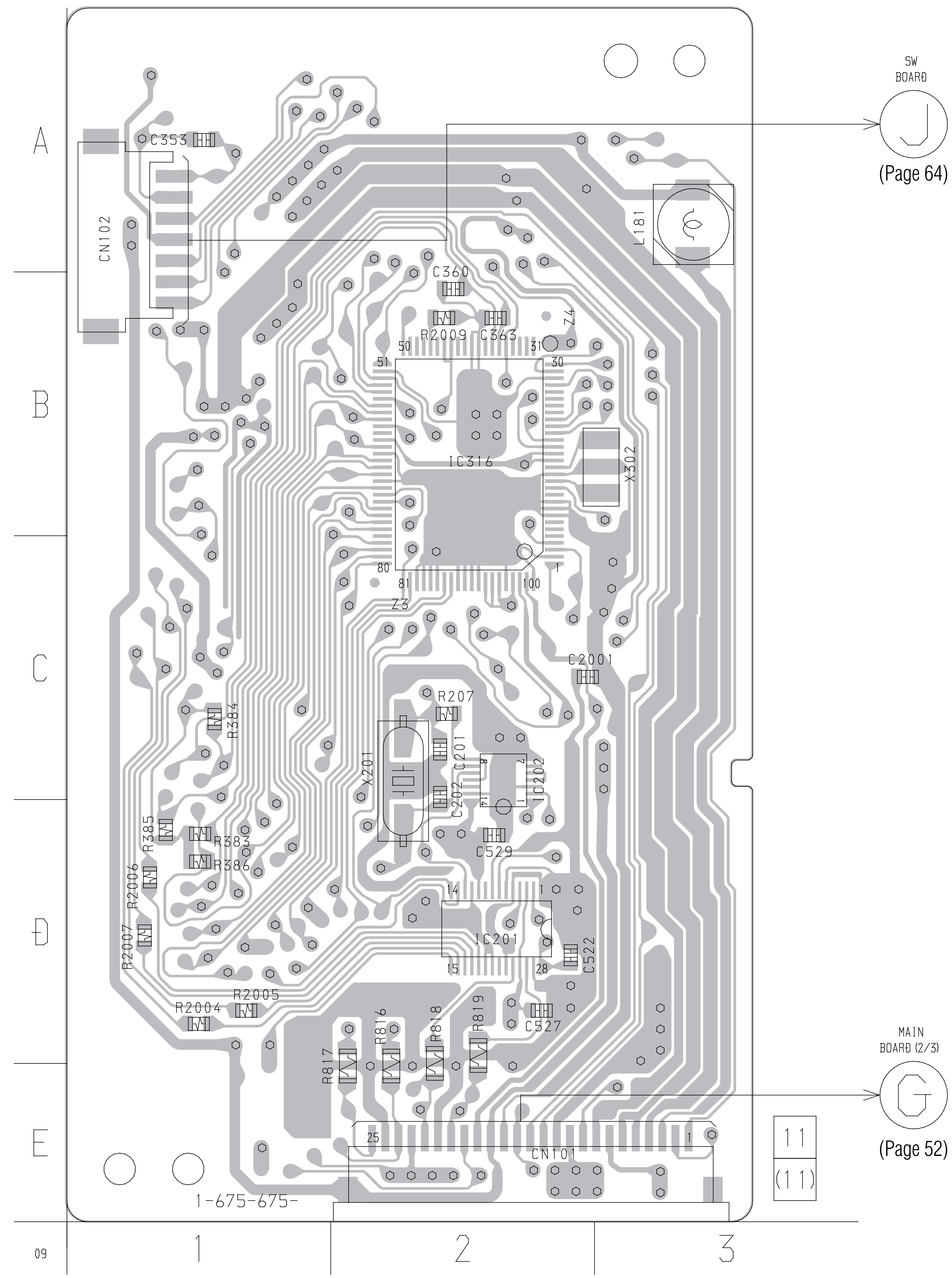
6-15. PRINTED WIRING BOARD – MD DIGITAL SECTION –

• See page 40 for Circuit Boards Location.

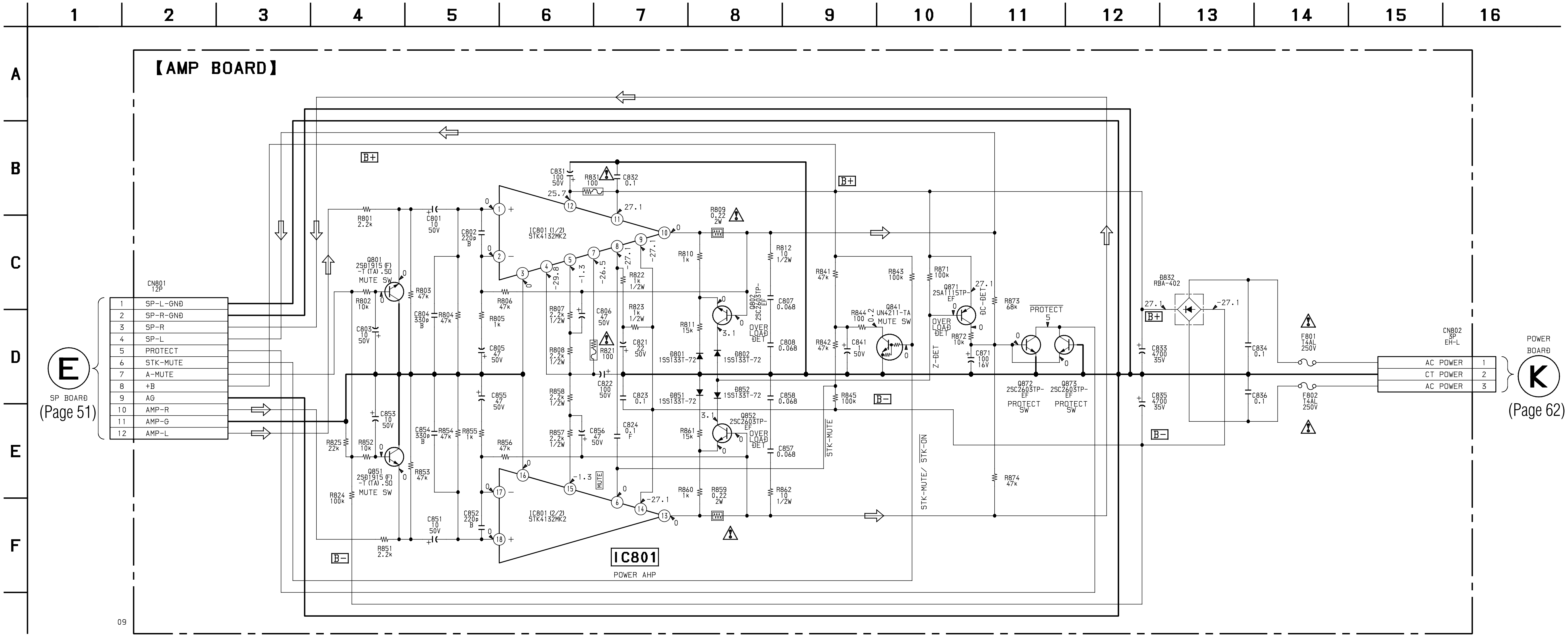
【MD DIGITAL BOARD】(SIDE A)



【MD DIGITAL BOARD】(SIDE B)



6-16. SCHEMATIC DIAGRAM – AMP SECTION –



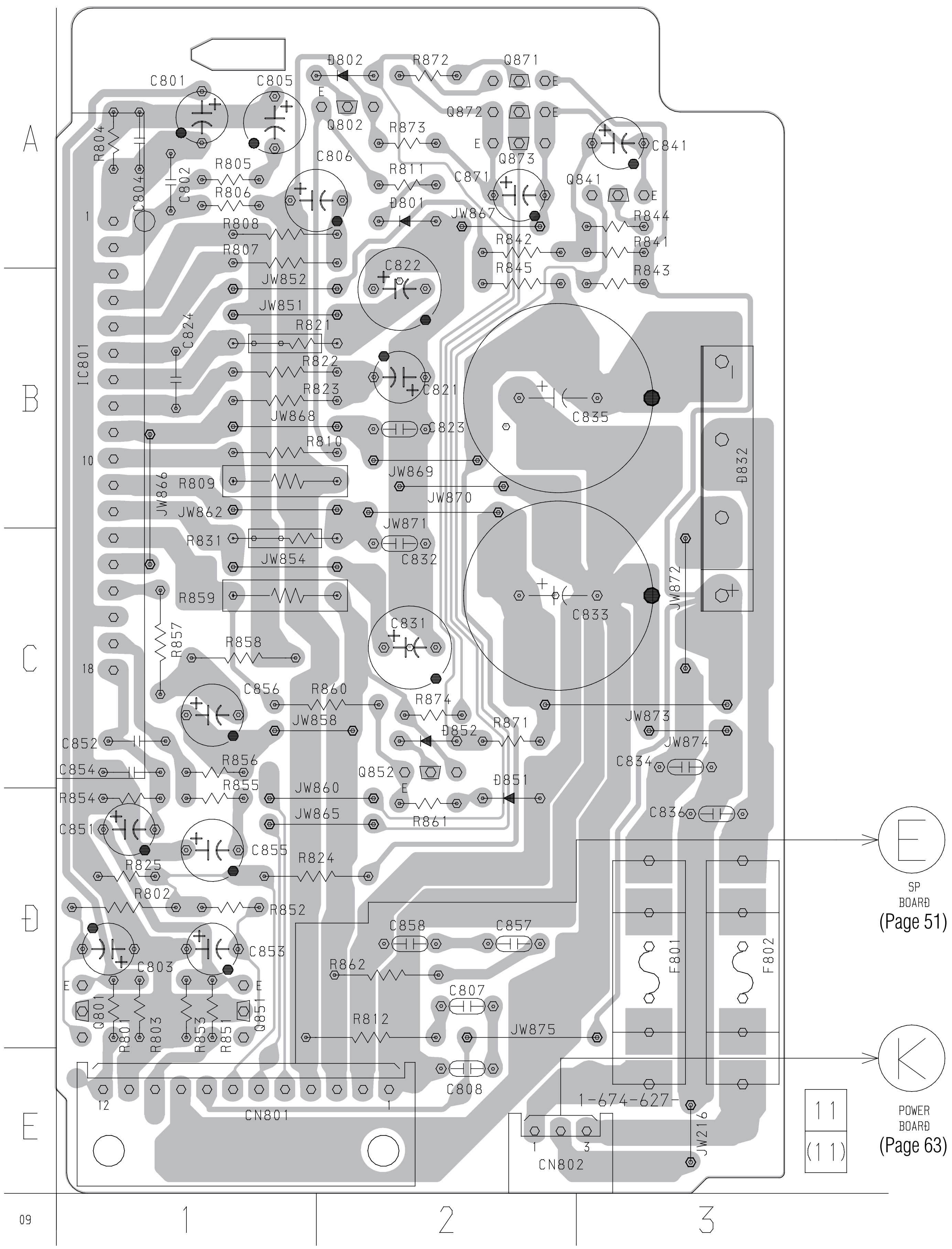
Note:The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

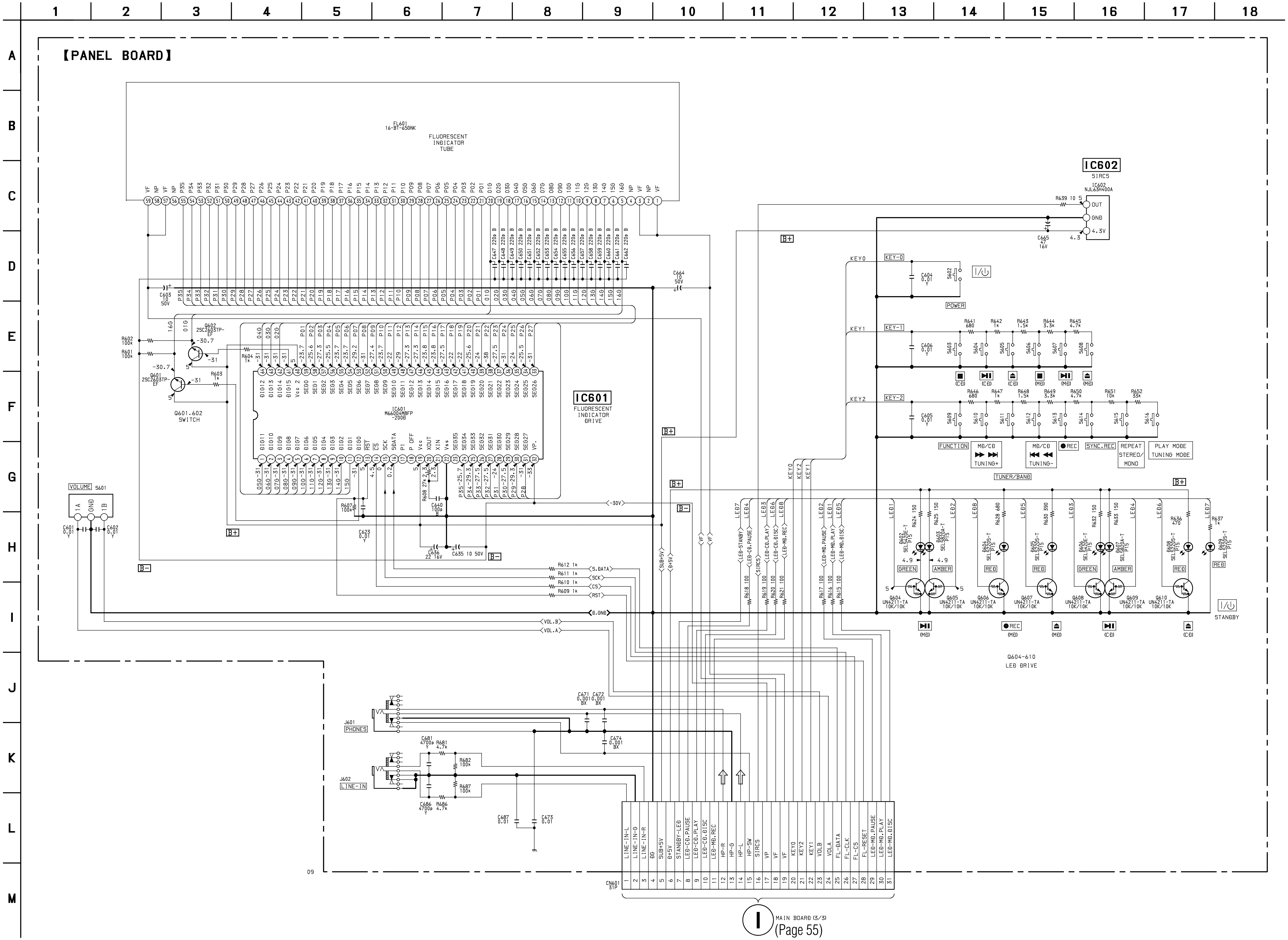
6-17. PRINTED WIRING BOARD – AMP SECTION –

• See page 40 for Circuit Boards Location.

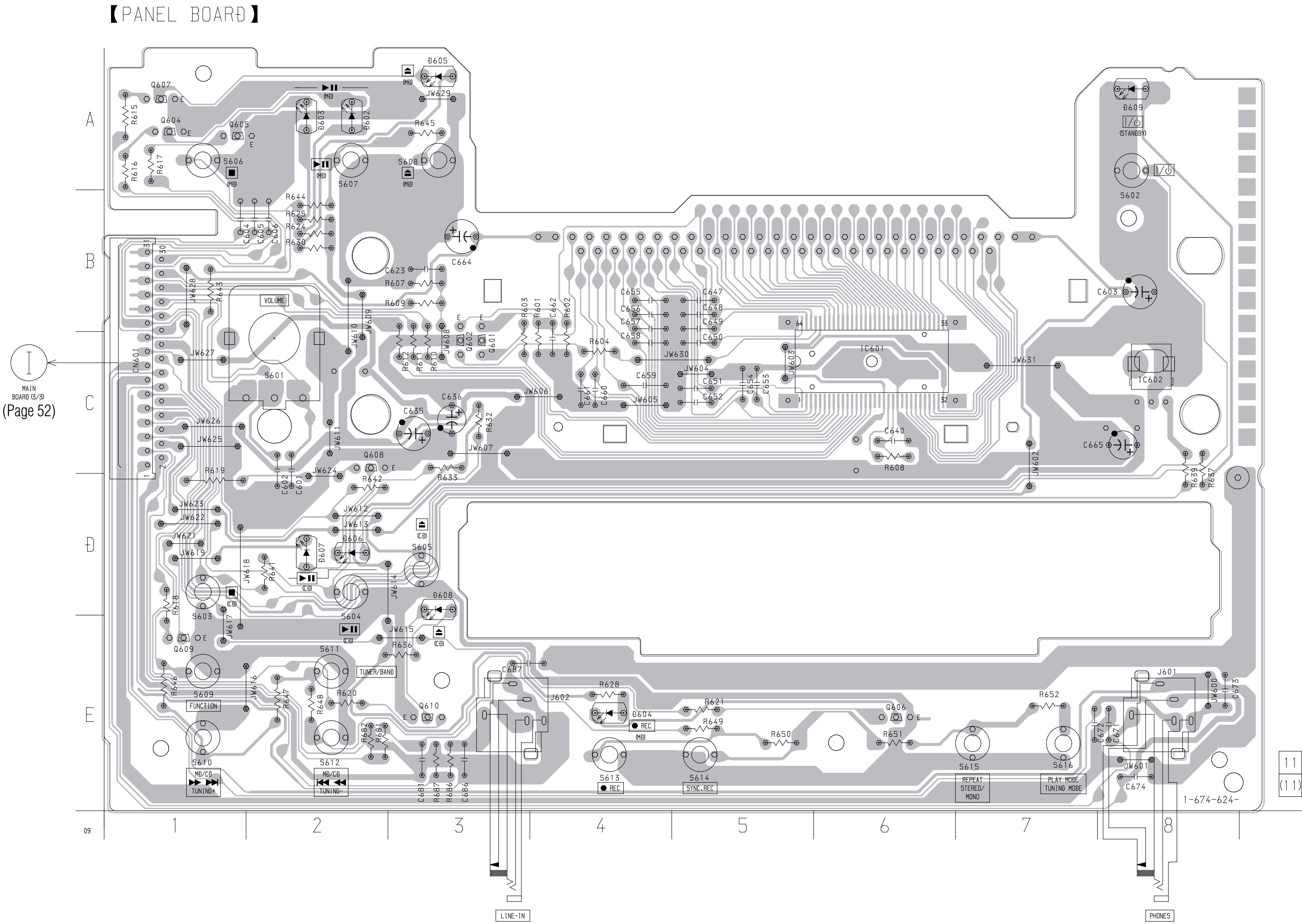
【AMP BOARD】



6-18. SCHEMATIC DIAGRAM – PANEL SECTION –



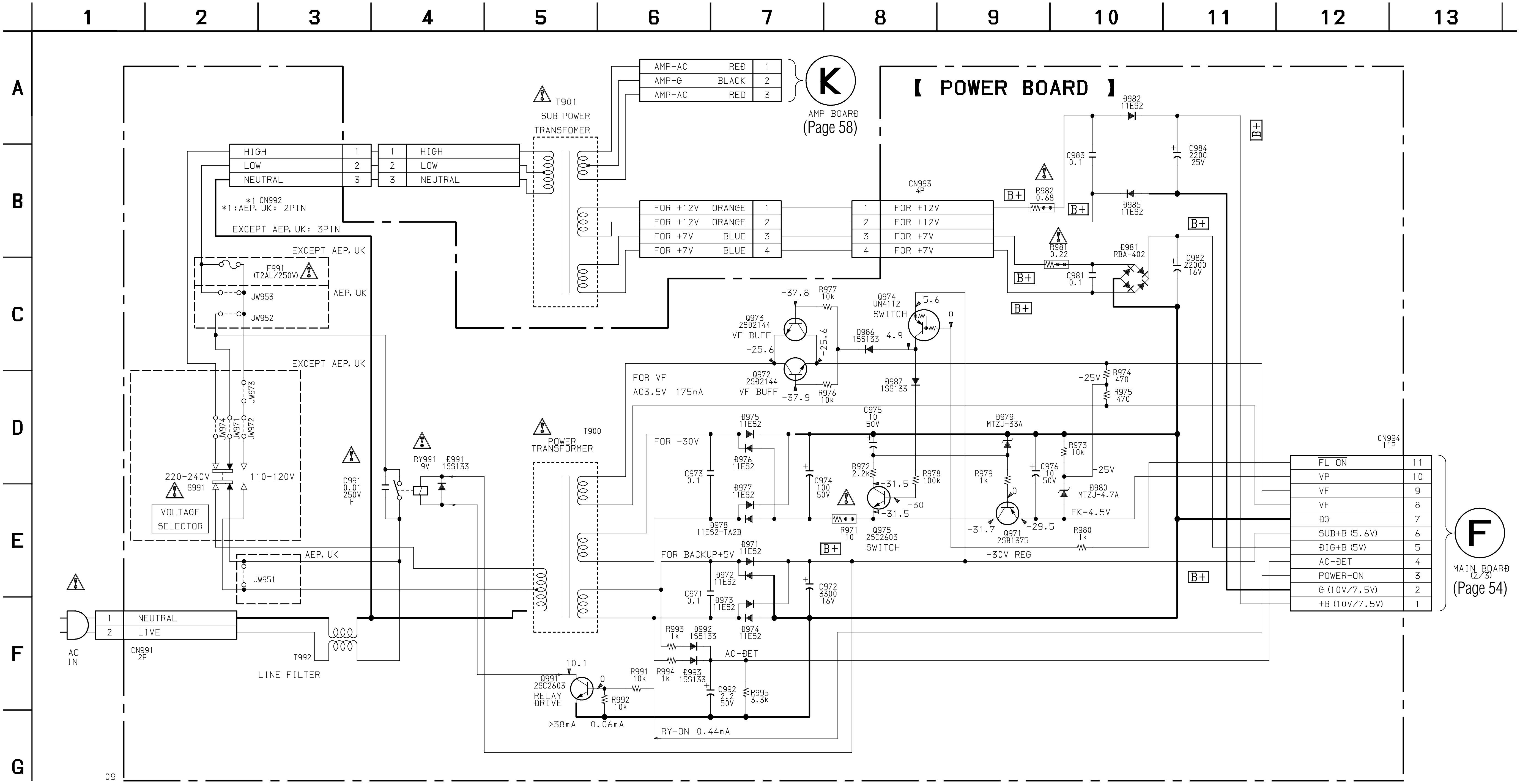
6-19. PRINTED WIRING BOARD – PANEL SECTION –
• See page 40 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D602	A-2
D603	A-2
D604	E-4
D605	A-3
D606	D-2
D607	D-2
D608	D-3
D609	A-8
IC601	C-6
IC602	C-8
Q601	C-3
Q602	C-3
Q604	A-1
Q605	A-1
Q606	E-6
Q607	A-1
Q608	C-2
Q609	E-1
Q610	E-3

6-20. SCHEMATIC DIAGRAM – POWER SECTION –



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

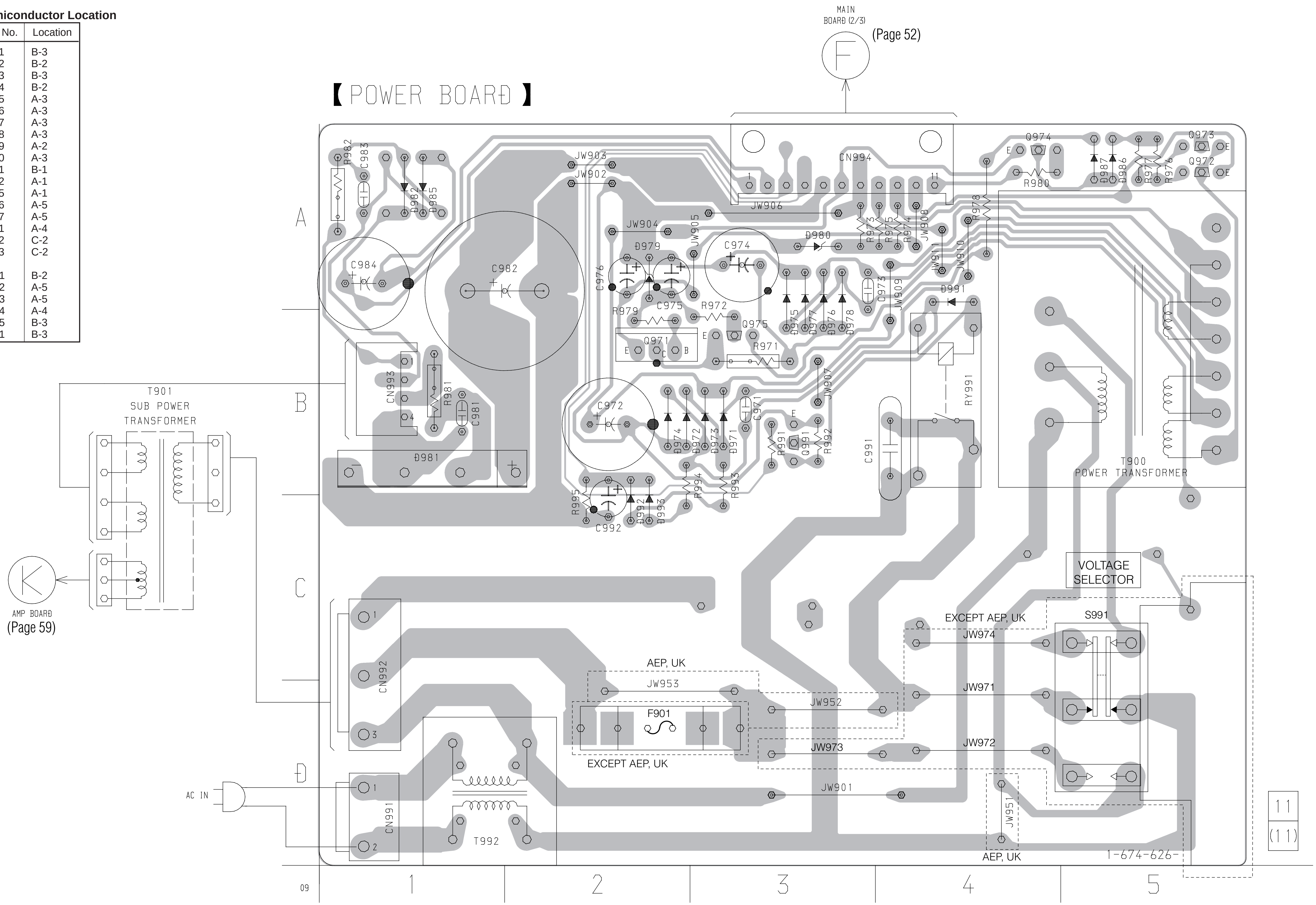
以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

6-21. PRINTED WIRING BOARD – POWER SECTION –

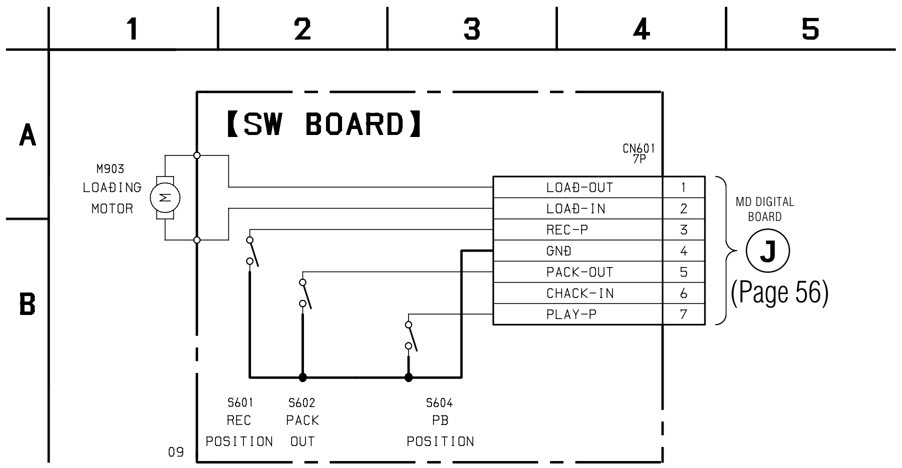
• See page 40 for Circuit Boards Location.

• Semiconductor Location

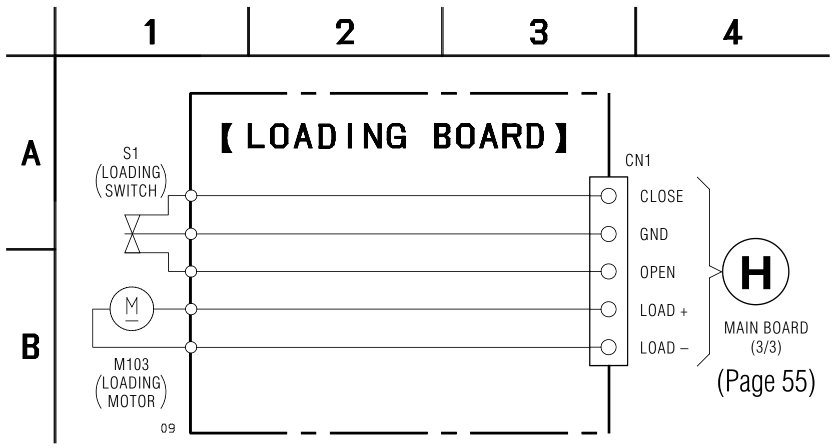
Ref. No.	Location
D971	B-3
D972	B-2
D973	B-3
D974	B-2
D975	A-3
D976	A-3
D977	A-3
D978	A-3
D979	A-2
D980	A-3
D981	B-1
D982	A-1
D985	A-1
D986	A-5
D987	A-5
D991	A-4
D992	C-2
D993	C-2
Q971	B-2
Q972	A-5
Q973	A-5
Q974	A-4
Q975	B-3
Q991	B-3



6-22. SCHEMATIC DIAGRAM – BD SWITCH SECTION –

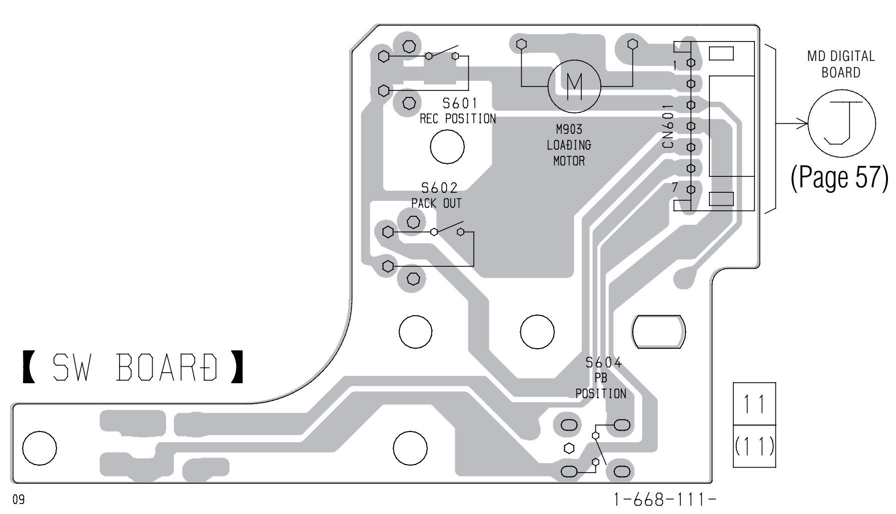


6-24. SCHEMATIC DIAGRAM – LOADING SECTION –



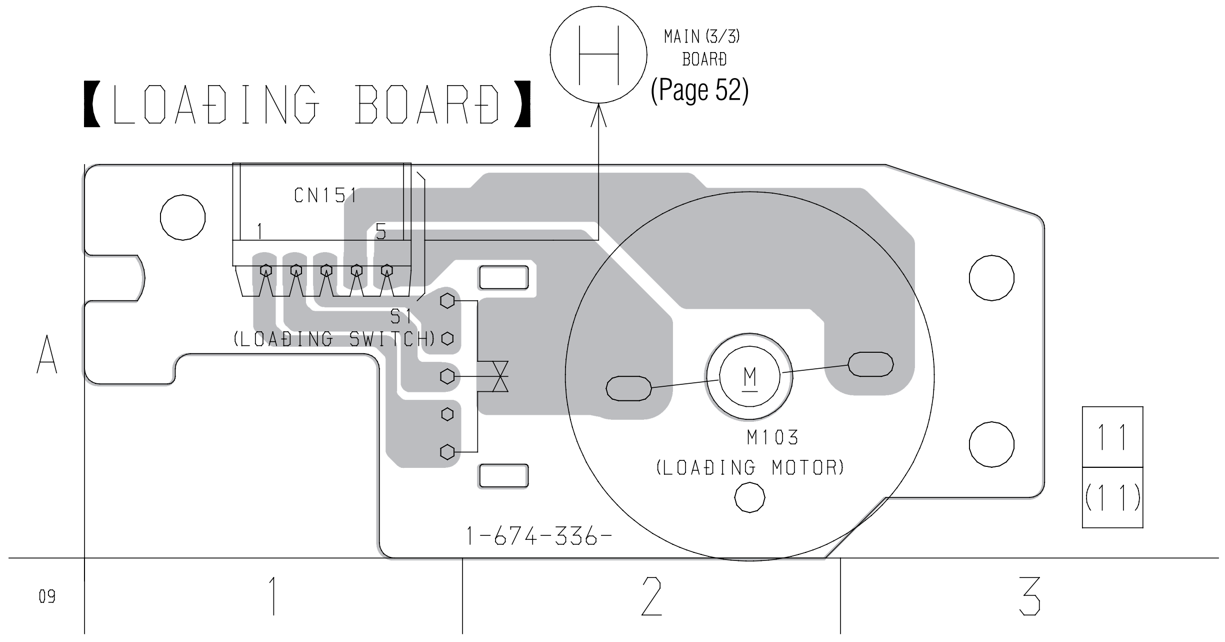
6-23. PRINTED WIRING BOARD – BD SWITCH SECTION –

• See page 40 for Circuit Boards Location.



6-25. PRINTED WIRING BOARD – LOADING SECTION –

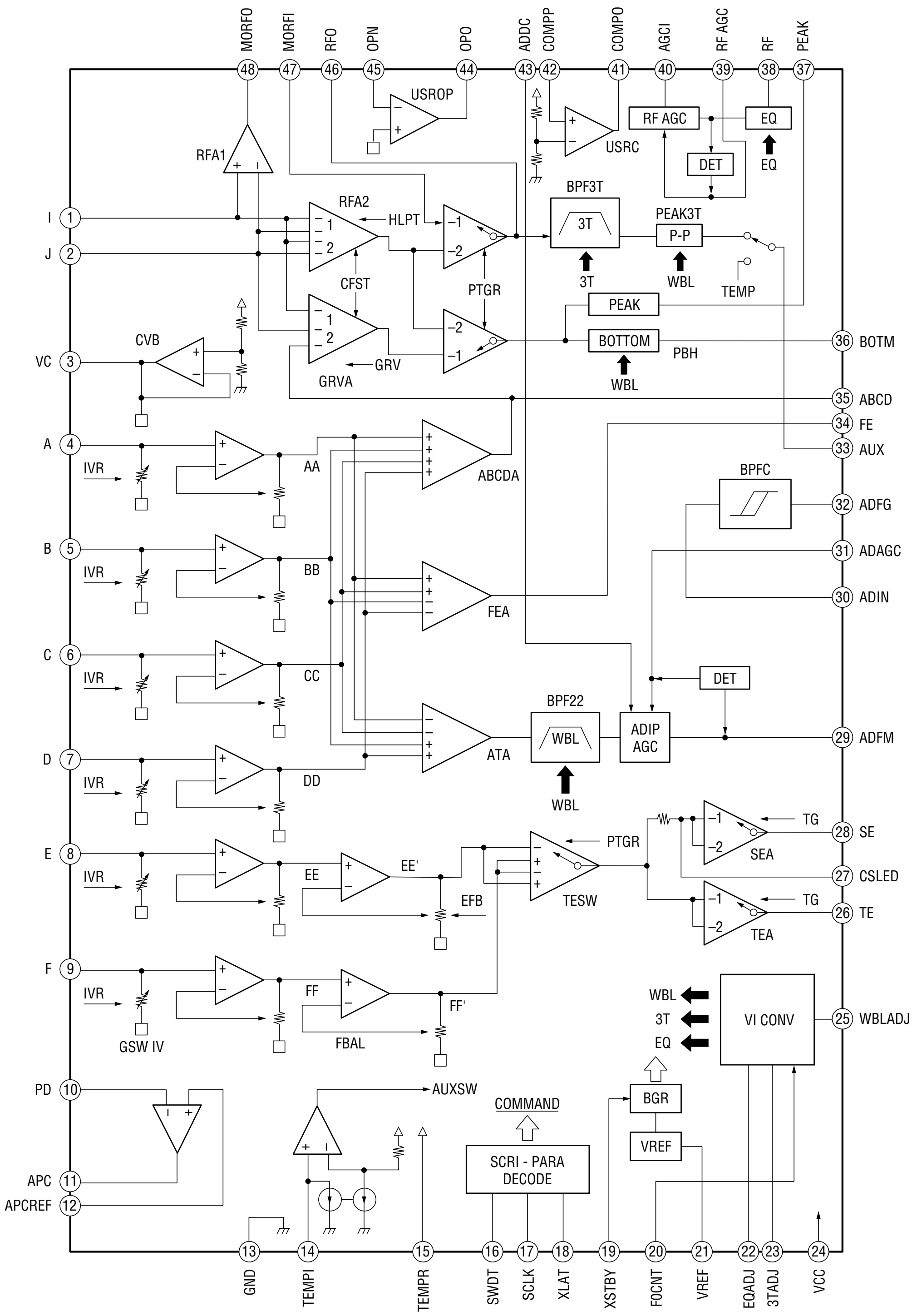
• See page 40 for Circuit Boards Location.



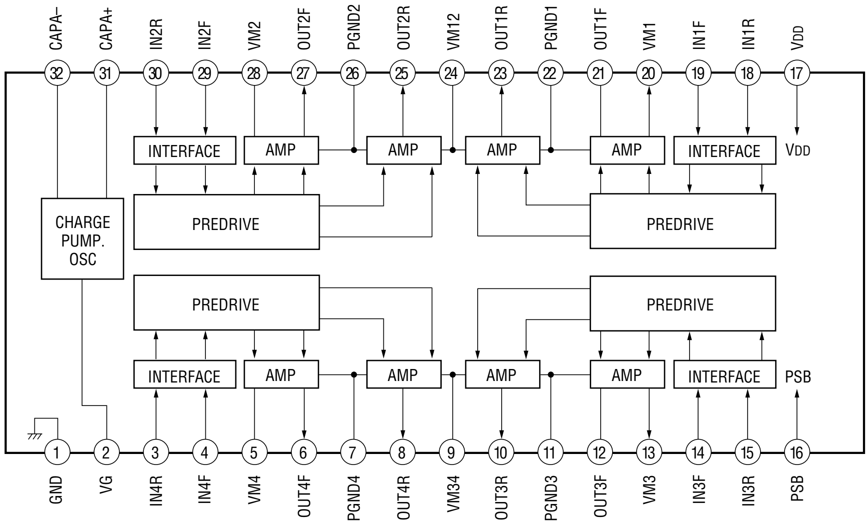
6-26. IC BLOCK DIAGRAMS

• BD (MD) Board (1/2)

IC101 CXA2523AR

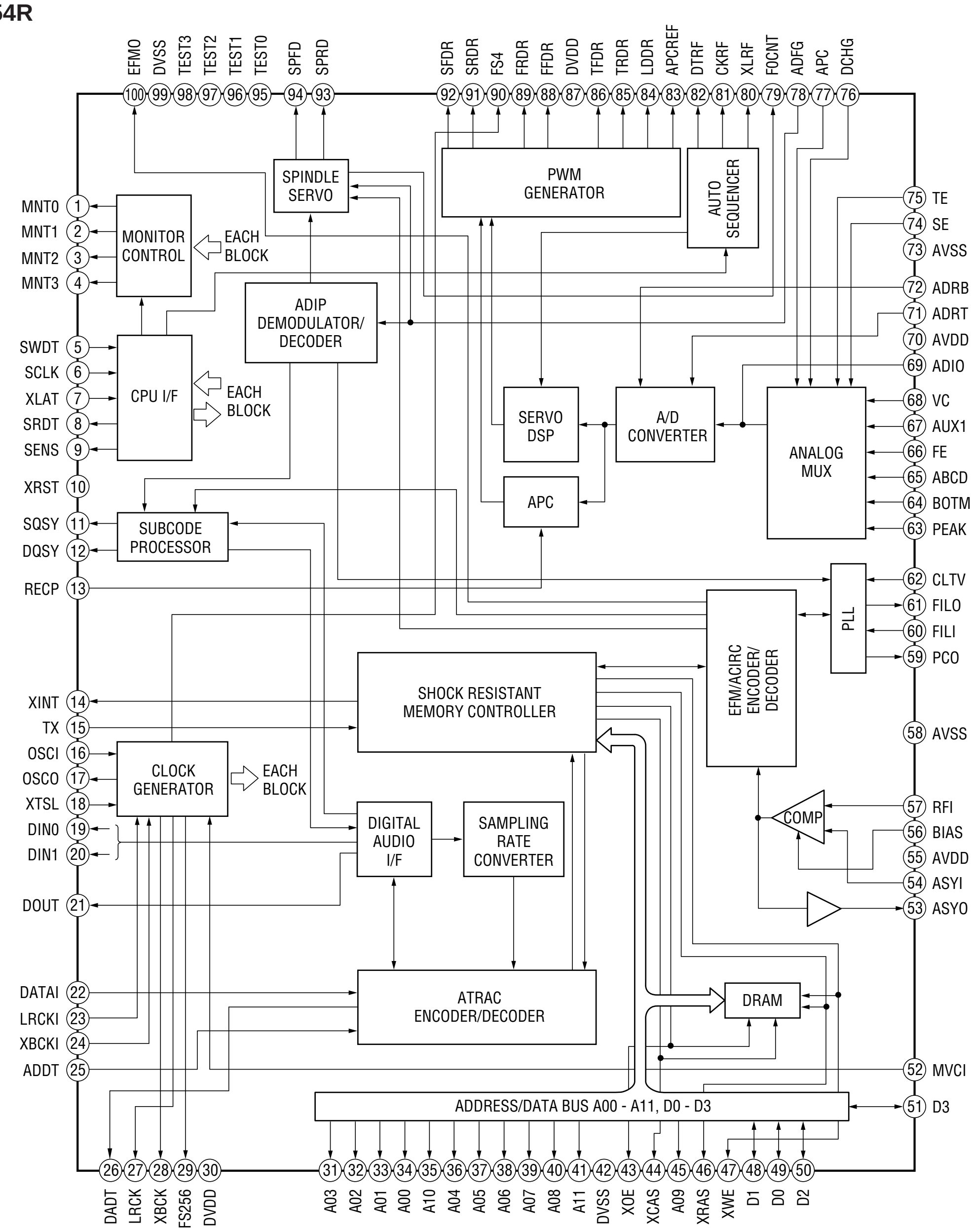


IC152 BH6511FS-E2



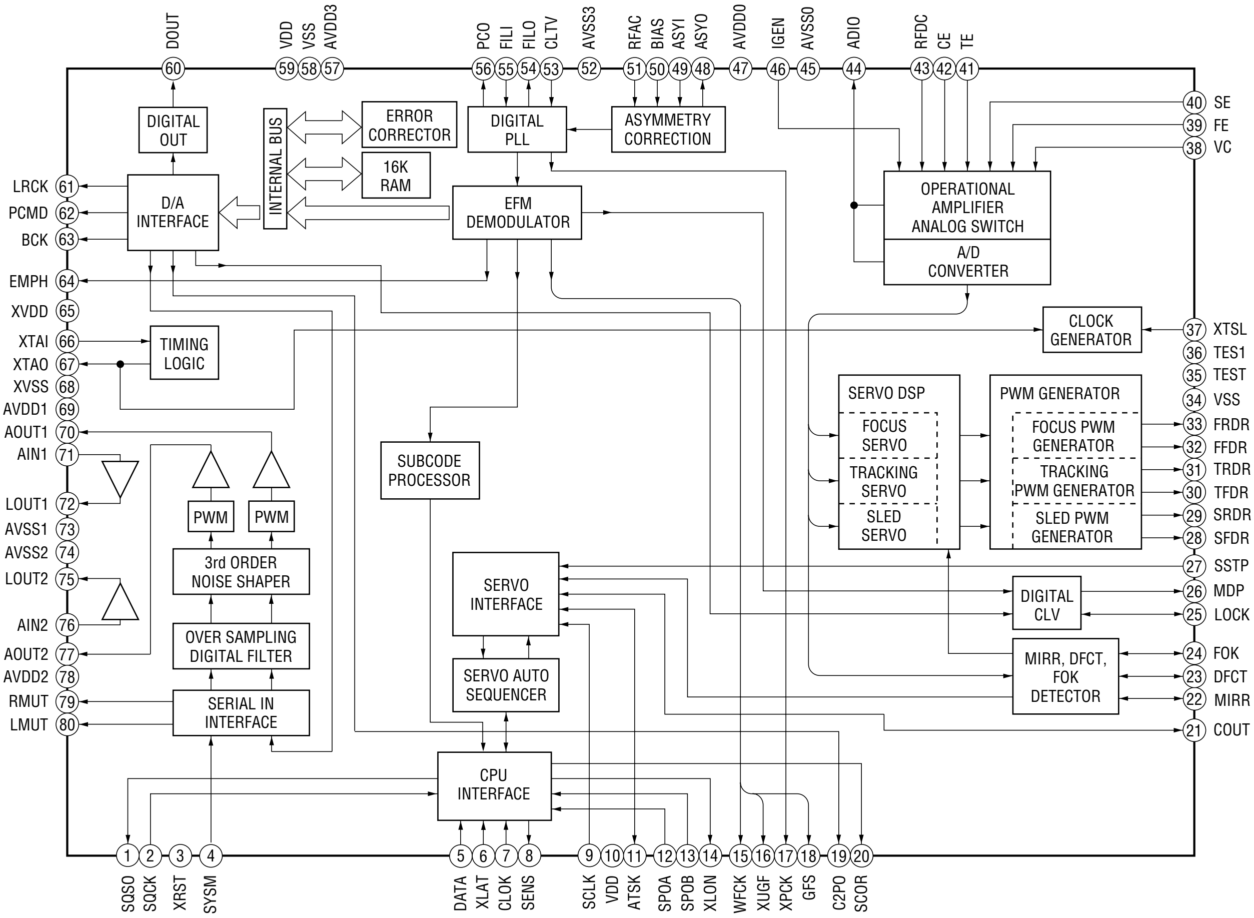
• BD (MD) Board (2/2)

IC121 CXD2654R

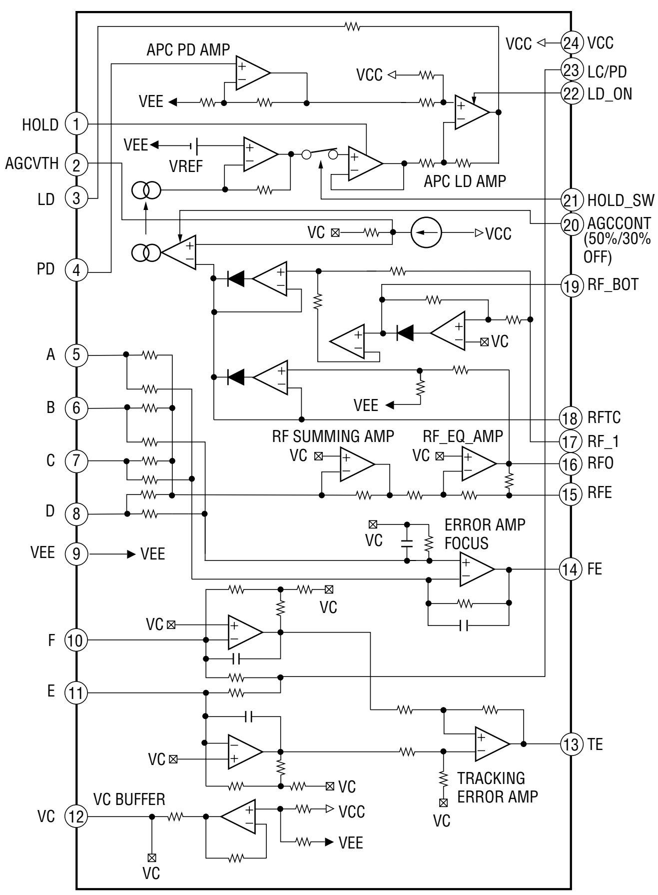


• BD (CD) Board

IC101 CXD2587Q

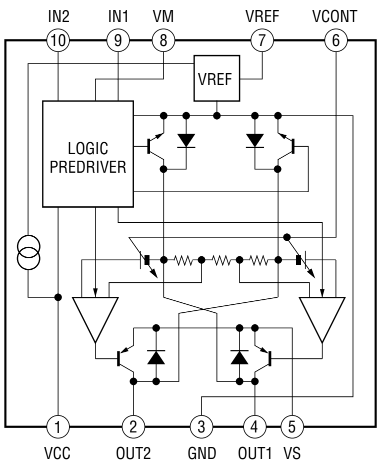


C103 CXA2568M-T6



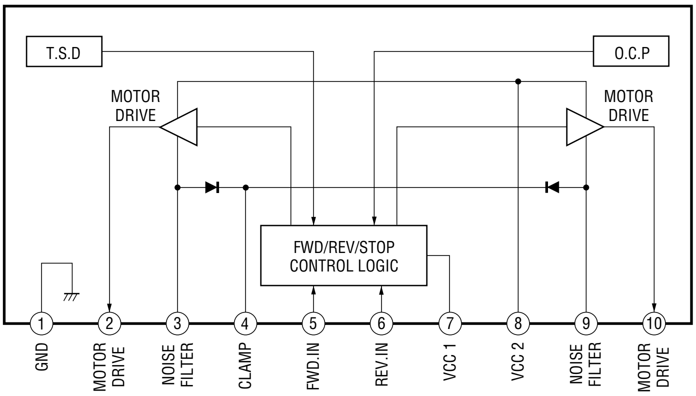
• MD DIGITAL Board

IC153 LB1830M-S-TE-L

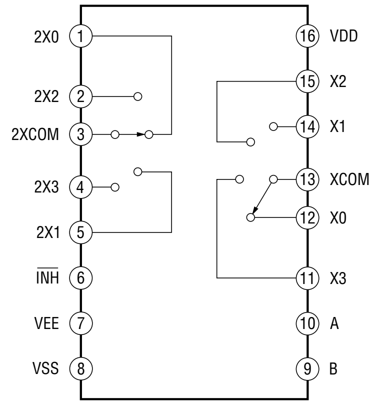


• **MAIN Board (3/3)**

IC171 LB1641

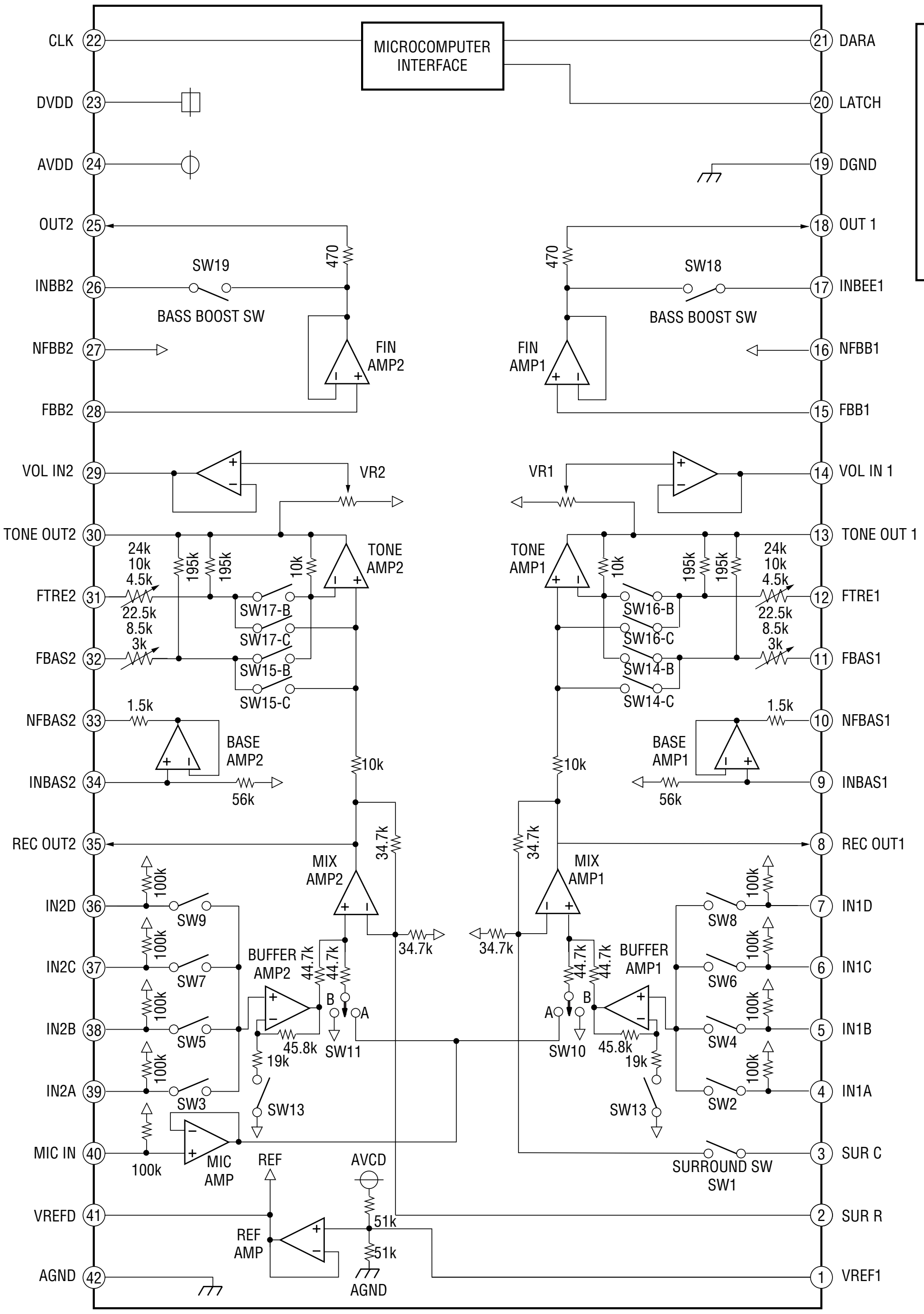


IC302 MC14052B



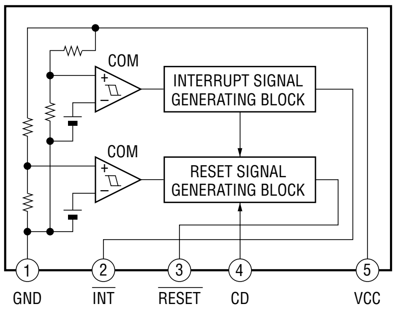
• **MAIN Board (1/3)**

IC301 M62428AFP



• **MAIN Board (2/3)**

IC931 M62016L



6-27. IC PIN FUNCTIONS

• IC101 DIGITAL SIGNAL PROCESSOR (CXD2587Q) (BD(CD) board)

Pin No.	Pin Name	I/O	Function
1	SQSO	O	Sub-Q 80-bit and PCM peak level data output (CD text data output)
2	SQCK	I	Clock input for SQSO read-out
3	XRST	I	System reset “L” : reset
4	SYSM	I	Muting input “H” : mute
5	DATA	I	Serial data input, supplied from CPU
6	XLAT	I	Latch input, supplied from CPU
7	CLOK	I	Serial data transfer clock input, supplied from CPU
8	SENS	O	SENS signal output to CPU
9	SCLK	I	SENS serial data read-out clock input
10	VDD	—	Digital power supply
11	ATSK	I/O	Input pin for anti-shock (Connected to ground)
12	SPOA	I	Microcomputer escape interface input A
13	SPOB	I	Microcomputer escape interface input B
14	XLON	O	Microcomputer escape interface output
15	WFCK	O	WFCK output (Not used)
16	XUGF	O	Not used
17	XPCK	O	Not used
18	GFS	O	Not used
19	C2PO	O	Not used
20	SCOR	O	Sub-code sync output
21	COUT	I/O	Not used
22	MIRR	I/O	Mirror signal input/output (Not used)
23	DFCT	I/O	Defect signal input/output (Not used)
24	FOK	I/O	Focus OK input/output (Not used)
25	LOCK	I/O	Not used
26	MDP	O	Output to control spindle motor servo
27	SSTP	I	Input signal to detect disc inner most track
28	SFDR	O	Sled drive output
29	SRDR	O	Sled drive output
30	TFDR	O	Tracking drive output
31	TRDR	O	Tracking drive output
32	FFDR	O	Focus drive output
33	FRDR	O	Focus drive output
34	VSS	—	Digital ground
35	TEST	I	TEST pin connected normally to ground
36	TES1	I	TEST pin connected normally to ground
37	XTSL	I	X'tal selection input (Connected to ground)
38	VC	I	Center voltage input pin
39	FE	I	Focus error signal input
40	SE	I	Sled error signal input

• Abbreviation
GFS : Guarded Frame Sync

Pin No.	Pin Name	I/O	Function
41	TE	I	Tracking error signal input
42	CE	I	Center servo analog input
43	RFDC	I	RF signal input
44	ADIO	O	Test pin (Not used)
45	AVSS0	—	Analog ground
46	IGEN	I	Stabilized current input for operational amplifiers
47	AVDD0	—	Analog power supply
48	ASYO	O	EFM full swing output
49	ASYI	I	EFM asymmetry comparate voltage input
50	BIAS	I	Asymmetry circuit constant current input
51	RFAC	I	EFM signal input
52	AVSS3	—	Analog ground
53	CLTV	I	Control voltage input for master VCO1
54	FILO	O	Filter output for master PLL
55	FILI	I	Filter input for master PLL
56	PCO	O	Charge-pump output for master PLL
57	AVDD3	—	Analog power supply
58	VSS	—	Digital ground
59	VDD	—	Digital power supply
60	DOUT	O	Digital-out output pin
61	LRCK	O	D/A interface LR clock output (f = Fs) (Not used)
62	PCMD	O	D/A interface serial data output (Not used)
63	BCK	O	D/A interface bit clock output (Not used)
64	EMPH	O	Playback disc output in emphasis mode (Not used)
65	XVDD	—	Power supply for master clock
66	XTAI	I	X'tal oscillator circuit input (16.9344MHz)
67	XTAO	O	X'tal oscillator circuit output (16.9344MHz)
68	XVSS	—	Ground for master clock
69	AVDD1	—	Analog power supply
70	AOUT1	O	L-ch analog output
71	AIN1	I	L-ch operational amplifiers input
72	LOUT1	O	L-ch line output
73	AVSS1	—	Analog ground
74	AVSS2	—	Analog ground
75	LOUT2	O	R-ch line output
76	AIN2	I	R-ch operational amplifiers input
77	AOUT2	O	R-ch analog output
78	AVDD2	—	Analog power supply
79	RMUT	O	R-ch “0” detection flag output
80	LMUT	O	L-ch “0” detection flag output

- Abbreviation
  EFM : Eight to Fourteen Modulation
  PLL : Phase Locked Loop

• **IC101 RF Amplifier (CXA2523AR) (BD(MD) board)**

Pin No.	Pin Name	I/O	Function
1	I	I	I-V converted RF signal I input
2	J	I	I-V converted RF signal J input
3	VC	O	Middle point voltage (+1.5V) generation output
4 to 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input
11	APC	O	Laser APC output
12	APCREF	I	Reference voltage input for setting laser power
13	GND	—	Ground
14	TEMPI	I	Temperature sensor connection
15	TEMPR	O	Reference voltage output for the temperature sensor
16	SWDT	I	Serial data input from the CXD2650R or CXD2652AR
17	SCLK	I	Serial clock input from the CXD2650R or CXD2652AR
18	XLAT	I	Latch signal input from the CXD2650R or CXD2652AR “L”: Latch
19	XSTBY	I	Stand by signal input “L”: Stand by
20	F0CNT	I	Center frequency control voltage input of BPF22, BPF3T, EQ from the CXD2650R or CXD2652AR
21	VREF	O	Reference voltage output (Not used)
22	EQADJ	I/O	Center frequency setting pin for the internal circuit EQ
23	3TADJ	I/O	Center frequency setting pin for the internal circuit BPF3T
24	Vcc	—	+3V power supply
25	WBLADJ	I/O	Center frequency setting pin for the internal circuit BPF22
26	TE	O	Tracking error signal output to the CXD2650R or CXD2652AR
27	CSLED	—	External capacitor connection pin for the sled error signal LPF
28	SE	O	Sled error signal output to the CXD2650R or CXD2652AR
29	ADFM	O	FM signal output of ADIP
30	ADIN	I	ADIP signal comparator input ADFM is connected with AC coupling
31	ADAGC	—	External capacitor connection pin for AGC of ADIP
32	ADFG	O	ADIP duplex signal output to the CXD2650R or CXD2652AR
33	AUX	O	I_3 signal/temperature signal output to the CXD2650R or CXD2652AR (Switching with a serial command)
34	FE	O	Focus error signal output to the CXD2650R or CXD2652AR
35	ABCD	O	Light amount signal output to the CXD2650R or CXD2652AR
36	BOTM	O	RF/ABCD bottom hold signal output to the CXD2650R or CXD2652AR
37	PEAK	O	RF/ABCD peak hold signal output to the CXD2650R or CXD2652AR
38	RF	O	RF equalizer output to the CXD2650R or CXD2652AR
39	RFAGC	—	External capacitor connection pin for the RF AGC circuit
40	AGCI	I	Input to the RF AGC circuit The RF amplifier output is input with AC coupling
41	COMPO	O	User comparator output (Not used)
42	COMPP	I	User comparator input (Fixed at “L”)
43	ADDC	I/O	External capacitor pin for cutting the low band of the ADIP amplifier
44	OPO	O	User operation amplifier output (Not used)
45	OPN	I	User operation amplifier inversion input (Fixed at “L”)
46	RFO	O	RF amplifier output
47	MORFI	I	Groove RF signal is input with AC coupling
48	MORFO	O	Groove RF signal output

• Abbreviation
APC: Auto Power Control
AGC: Auto Gain Control

- **IC121 Digital Signal Processor, Digital Servo Signal Processor, EFM/ACIRC Encoder/Decoder, Shock-proof Memory Controller, ATRAC Encoder/Decoder, 2M Bit DRAM (CXD2654R) (BD (MD) board)**

Pin No.	Pin Name	I/O	Function
1	MNT0 (FOK)	O	FOK signal output to the system control (monitor output) “H” is output when focus is on
2	MNT1 (SHCK)	O	Track jump detection signal output to the system control (monitor output)
3	MNT2 (XBUSY)	O	Monitor 2 output to the system control (monitor output)
4	MNT3 (SLOC)	O	Monitor 3 output to the system control (monitor output)
5	SWDT	I	Writing data signal input from the system control
6	SCLK	I (S)	Serial clock signal input from the system control
7	XLAT	I (S)	Serial latch signal input from the system control
8	SRDT	O (3)	Reading data signal output to the system control
9	SENS	O (3)	Internal status (SENSE) output to the system control
10	XRST	I (S)	Reset signal input from the system control “L”: Reset
11	SQSY	O	Subcode Q sync (SCOR) output to the system control “L” is output every 13.3 msec. Almost all, “H” is output
12	DQSY	O	Digital In U-bit CD format or MD format subcode Q sync (SCOR) output to the system control
13	RECP	I	Laser power switching input from the system control “H”: Recording, “L”: Playback
14	XINT	O	Interrupt status output to the system control
15	TX	I	Recording data output enable input from the system control
16	OSCI	I	System clock input (512Fs=22.5792 MHz)
17	OSCO	O	System clock output (512Fs=22.5792 MHz) (Not used)
18	XTSL	I	System clock frequency setting “L”: 45.1584 MHz, “H”: 22.5792 MHz (Fixed at “H”)
19	DIN0	I	Digital audio input (Optical input)
20	DIN1	I	Digital audio input (Optical input)
21	DOUT	O	Digital audio output (Optical output)
22	DADTI	I	Serial data input
23	LRCKI	I	LR clock input “H” : Lch, “L” : R ch
24	XBCKI	I	Serial data clock input
25	ADDT	I	Data input from the A/D converter
26	DADT	O	Data output to the D/A converter
27	LRCK	O	LR clock output for the A/D and D/A converter (44.1 kHz)
28	XBCK	O	Bit clock output to the A/D and D/A converter (2.8224 MHz)
29	FS256	O	11.2896 MHz clock output (Not used)
30	DVDD	—	+3V power supply (Digital)
31 to 34	A03 to A00	O	DRAM address output
35	A10	O	DRAM address output (Not used)
36 to 40	A04 to A08	O	DRAM address output
41	A11	O	DRAM address output (Not used)
42	DVSS	—	Ground (Digital)
43	XOE	O	Output enable output for DRAM
44	XCAS	O	$\overline{\text{CAS}}$ signal output for DRAM
45	A09	O	Address output for DRAM
46	XRAS	O	$\overline{\text{RAS}}$ signal output for DRAM
47	XWE	O	Write enable signal output for DRAM (Used : CXD2652AR, Not used : CXD2650R)

* I (S) stands for Schmidt input, I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O

Pin No.	Pin Name	I/O	Function
48	D1	I/O	Data input/output for DRAM
49	D0	I/O	
50, 51	D2, D3	I/O	
52	MVCI	I (S)	Clock input from an external VCO (Fixed at “L”)
53	ASYO	O	Playback EFM duplex signal output
54	ASYI	I (A)	Playback EFM comparator slice level input
55	AVDD	—	+3V power supply (Analog)
56	BIAS	I (A)	Playback EFM comparator bias current input
57	RFI	I (A)	Playback EFM RF signal input
58	AVSS	—	Ground (Analog)
59	PCO	O (3)	Phase comparison output for the recording/playback EFM master PLL
60	FILI	I (A)	Filter input for the recording/playback EFM master PLL
61	FILO	O (A)	Filter output for the recording/playback EFM master PLL
62	CLTV	I (A)	Internal VCO control voltage input for the recording/playback EFM master PLL
63	PEAK	I (A)	Light amount signal peak hold input from the CXA2523R
64	BOTM	I (A)	Light amount signal bottom hold input from the CXA2523R
65	ABCD	I (A)	Light amount signal input from the CXA2523R
66	FE	I (A)	Focus error signal input from the CXA2523R
67	AUX1	I (A)	Auxiliary A/D input
68	VC	I (A)	Middle point voltage (+1.5V) input from the CXA2523R
69	ADIO	O (A)	Monitor output of the A/D converter input signal (Not used)
70	AVDD	—	+3V power supply (Analog)
71	ADRT	I (A)	A/D converter operational range upper limit voltage input (Fixed at “H”)
72	ADRB	I (A)	A/D converter operational range lower limit voltage input (Fixed at “L”)
73	AVSS	—	Ground (Analog)
74	SE	I (A)	Sled error signal input from the CXA2523R
75	TE	I (A)	Tracking error signal input from the CXA2523R
76	DCHG	I (A)	Connected to +3V power supply
77	APC	I (A)	Error signal input for the laser digital APC (Fixed at “L”)
78	ADFG	I (S)	ADIP duplex FM signal input from the CXA2523R (22.05 ± 1 kHz)
79	F0CNT	O	Filter f_0 control output to the CXA2523R
80	XLRF	O	Control latch output to the CXA2523R
81	CKRF	O	Control clock output to the CXA2523R
82	DTRF	O	Control data output to the CXA2523R
83	APCREF	O	Reference PWM output for the laser APC
84	TEST0	O	PWM output for the laser digital APC (Not used)
85	TRDR	O	Tracking servo drive PWM output (–)

• Abbreviation
EFM: Eight to Fourteen Modulation
PLL : Phase Locked Loop
VCO: Voltage Controlled Oscillator

Pin No.	Pin Name	I/O	Function
86	TFDR	O	Tracking servo drive PWM output (+)
87	DVDD	—	+3V power supply (Digital)
88	FFDR	O	Focus servo drive PWM output (+)
89	FRDR	O	Focus servo drive PWM output (–)
90	FS4	O	176.4 kHz clock signal output (X'tal) (Not used)
91	SRDR	O	Sled servo drive PWM output (–)
92	SFDR	O	Sled servo drive PWM output (+)
93	SPRD	O	Spindle servo drive PWM output (–)
94	SPFD	O	Spindle servo drive PWM output (+)
95	FGIN	I (S)	Test input (Fixed at "L")
96 to 98	TEST1 to TEST3	I	
99	DVSS	—	Ground (Digital)
100	EFMO	O	EFM output when recording

- Abbreviation
  EFM: Eight to Fourteen Modulation

- **IC501 MASTER CONTROL (M30620ECFP-A21) (MAIN board)**

Pin No.	Pin Name	I/O	Function
1	STK-POWER	O	Power amp ON/OFF signal output
2	P	O	Power ON/OFF signal output (Not used)
3	F-RY	O	Front speaker relay control output
4	R-RY	O	Rear speaker relay control output (Not used)
5	CD-POWER	O	CD power on signal output
6	$\overline{\text{TA-MUTE}}$	O	Line mute ON/OFF signal output
7	DBFB-H	O	DBFB H/L select signal output (Not used)
8, 9	—	—	Not used
10	SUBXIN	I	X’tal (32.768kHz) input
11	SUBXOUT	O	X’tal (32.768kHz) output
12	RESET	I	Reset signal input
13	X-OUT	O	X’tal (16MHz) output
14	VSS	—	Ground
15	X-IN	I	X’tal (16MHz) input
16	VCC	—	Power supply (+5V)
17	NMI	I	Not used (PULL UP EVER+5V)
18	WAKE UP	I	WAKE UP (Fixed at fixed at “L”)
19	SCOR	I	Subcode data request signal output
20	RDS-INT	I	RDS data input
21	RDS-DATA	I	
22	AC-CUT	I	AC power cut detection signal input
23	PL-CLK	O	Clock signal to pro-logic (Not used)
24	PL-DATA	O	Data signal to pro-logic (Not used)
25	PL-LAT	O	Latch signal to pro-logic (Not used)
26	TIMER LED	O	Timer LED ON/OFF (Not used)
27	PROTECTOR IN	I	Speaker protect signal input
28	MD-RESET	O	MD reset signal output
29	IIC-CLK	I/O	I^{2}C bus CLK input/output
30	IIC-DATA	I/O	I^{2}C bus DATA input/output
31	TXQ	—	Not used
32	SQ-DATA	I	Subcode Q data input
33	SQ-CLK	O	Subcode Q data output
34	FL-RESET	O	FL reset signal
35	FL-DATA	O	FL data output
36	FL-CHIP SELECT	O	FL chip select signal
37	FL-CLK	O	FL clock output
38	62-LAT	O	M62428AFP (IC301) latch signal output
39	ST-BY LED	O	Sub clock signal output (Test mode)
40, 41	V-CINE	O	Not used
42	FL-ON	O	FL switch ON
43	POWER-ON	O	Stand by relay ON
44	B-FREQ	O	FREQ high/low signal for SYNC bass (Not used)
45	FUNC-SEL1	O	Function select signal output “L” : TAPE, “H” : LINE IN
46	OPT-SEL	O	Digital input select signal output
47	62-DATA	O	M62428AFP (IC301) data output
48	62-CLK	O	M62428AFP (IC301) clock output
49	ST-MUTE	O	ST mute signal output

Pin No.	Pin Name	I/O	Function
50	STEREO	I	Stereo signal input from the tuner
51	TUNED	I	Tuned signal input from the tuner
52	ST-CE	O	Tuner chip enable output
53	ST-DOUT	O	Tuner data output
54	ST-DIN	I	Tuner data input
55	ST-CLK	O	Tuned clock output
56	SENS	I	BD Condition signal input
57	HDLD	O	Mode hold signal output
58	CD-LAT	O	CD latch signal output
59	CD-RESET	O	CD reset signal output
60	DISC-SENS	I	Slit sensor of disc table input
61	TABLE-SENS	I	CD table detection signal input
62	VCC	—	Power supply (+5V)
63	TABLE-L	O	Table motor control output (Not used)
64	VSS	—	Ground
65	TABLE-R	O	Table motor control output (Not used)
66	LOAD-OUT	O	Loading motor control signal output
67	LOAD-IN	O	
68	UP-SW	I	Disc tray address detect encoder input
69	DISC-LED	I	
70	IN-SW	I	Loading in signal input
71	OUT-SW	I	Loading out signal input
72	LED	O	CD play
73	LED	O	MD disc in
74	LED	O	MD play
75	LED	O	MD pass
76	LED	O	CD pass
77	LED	O	CD disc in
78	LED	O	MD REC
79	STANDBY	O	Stand by
80	LED	O	Timer select (Not used)
81	CD DATA	O	CD data signal output
82	CD CLK	O	CD clock signal output
83	REC OUT CONT	O	REC out control “L” : MUTE
84, 85	JOG A, JOG B	—	Not used
86	VOL A	I	Volume signal input A
87	VOL B	I	Volume signal input B
88	SIRCS	I	SIRCS signal input
89 to 91	KEY 0 to KEY 2	I	key input
92	MD-REC-R	I	MD REC level signal input (R)
93	HERDPHONE	I	Heardphone detect “H” : YES, “L” : NO
94	MD-REC-L	I	MD REC level signal input (L)
95	MODEL-IN	I	MODEL input signal (Not used)
96	AG	—	Ground (Analog)
97	SPEC-IN	I	SPEC input
98	VREF	I	Reference voltage input
99	AVCC	I	+5.5V power supply
100	TEST	—	

SECTION 7
EXPLODED VIEWS

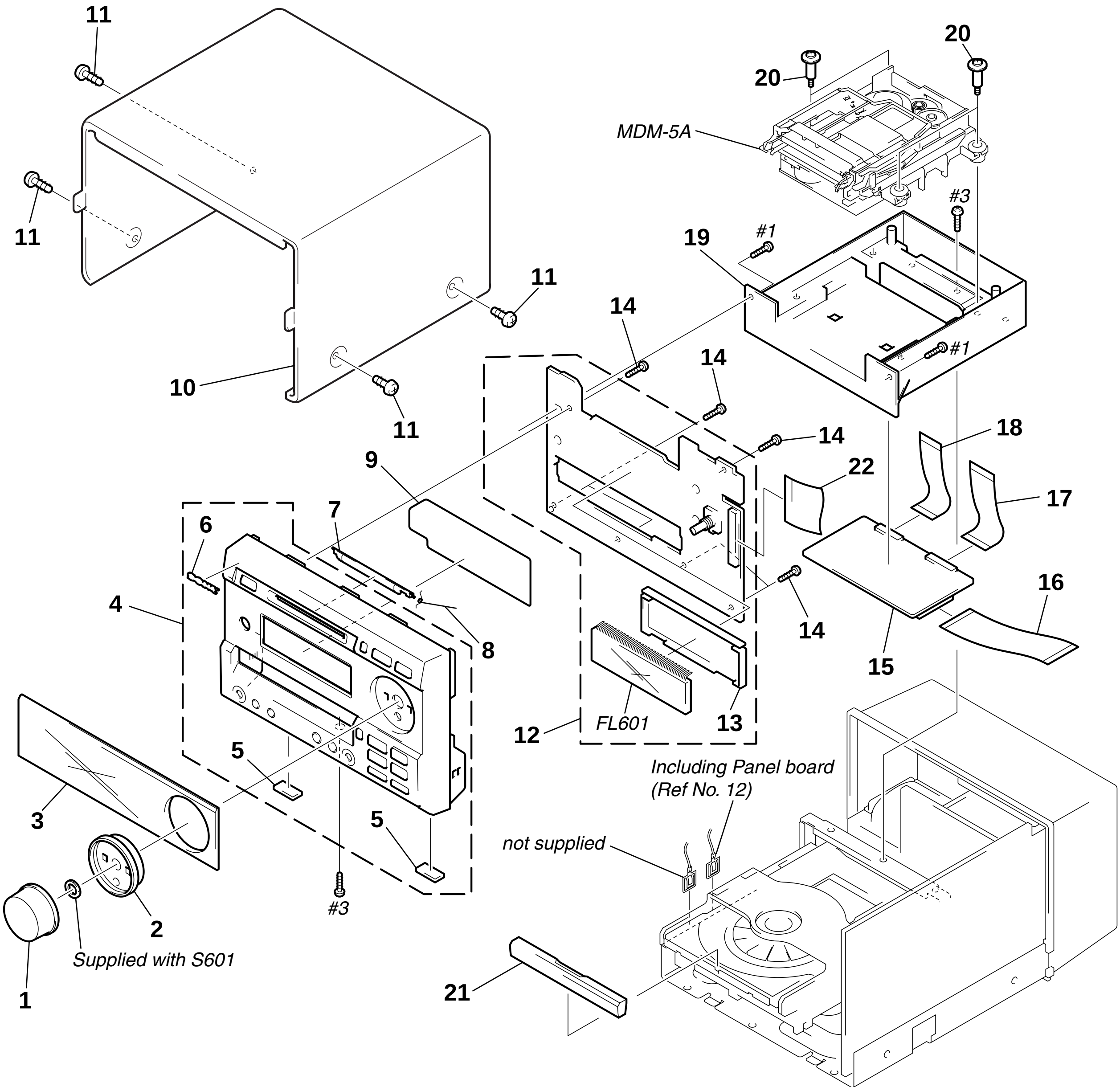
NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- Abbreviation
  - HK : Hong Kong model
  - SP : Singapore model
  - MY : Malaysia model
  - AR : Argentine model
  - AUS : Australian model
  - KR : Korea model
  - CH : Chinese model
  - JE : Tourist model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

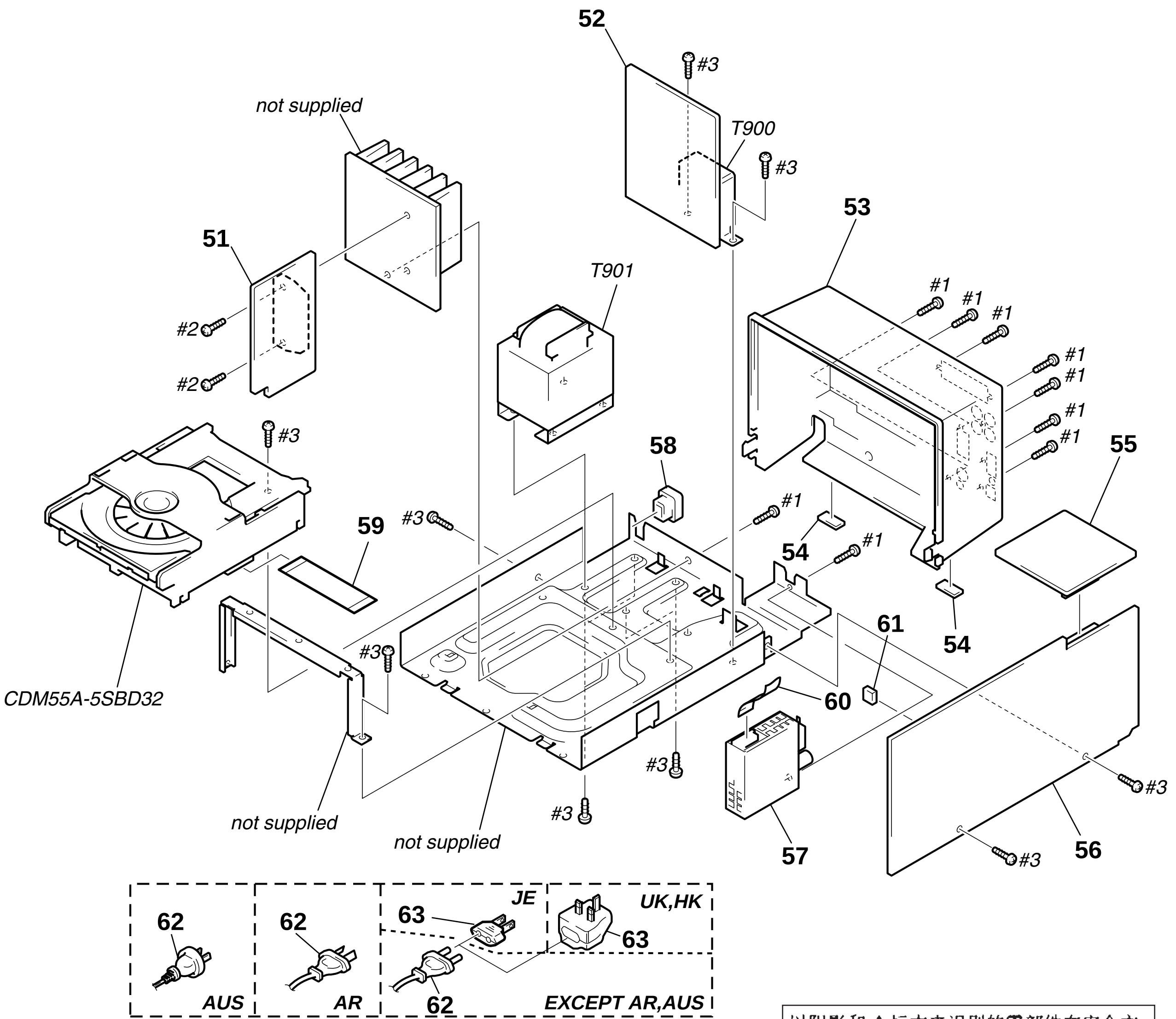
以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

7-1. CASE AND FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	4-221-106-01	KNOB (VOL)	
2	4-221-105-01	RING (VOL)	
3	4-221-087-01	PLATE (FL), INDICATION (EXCEPT AEP,UK)	
3	4-221-087-11	PLATE (FL), INDICATION (AEP,UK)	
4	X-4951-763-3	PANEL ASSY, FRONT	
* 5	4-930-336-71	FOOT (FELT)	
6	4-962-708-61	EMBLEM (4-A), SONY	
7	4-216-729-41	LID (CARTRIDGE)	
8	4-223-771-01	SPRING (LID)	
9	4-221-099-01	FILTER (FL)	
10	4-993-842-11	CASE	
11	3-363-099-11	SCREW (CASE 3 TP2)	
12	A-4426-073-A	PANEL BOARD, COMPLETE	
13	4-221-103-01	HOLDER (FL)	
14	4-951-620-01	SCREW (2.6X8), +BVTP	
15	A-4426-083-A	MD DIGITAL BOARD, COMPLETE	
16	1-773-212-11	WIRE (FLAT TYPE) (25 CORE)	
17	1-791-211-11	WIRE (FLAT TYPE) (23 CORE)	
18	1-777-240-11	WIRE (FLAT TYPE) (21 CORE)	
19	4-221-097-01	BRACKET (MDM)	
20	4-212-589-01	SCREW (+BVTPWH M3), STEP	
21	4-221-098-01	PANEL, LOADING	
22	1-791-223-11	WIPE (FLAT TYPE) (31 CORE)	
FL601	1-517-901-11	INDICATOR TUBE, FLUORESCENT	

7-2. CHASSIS SECTION

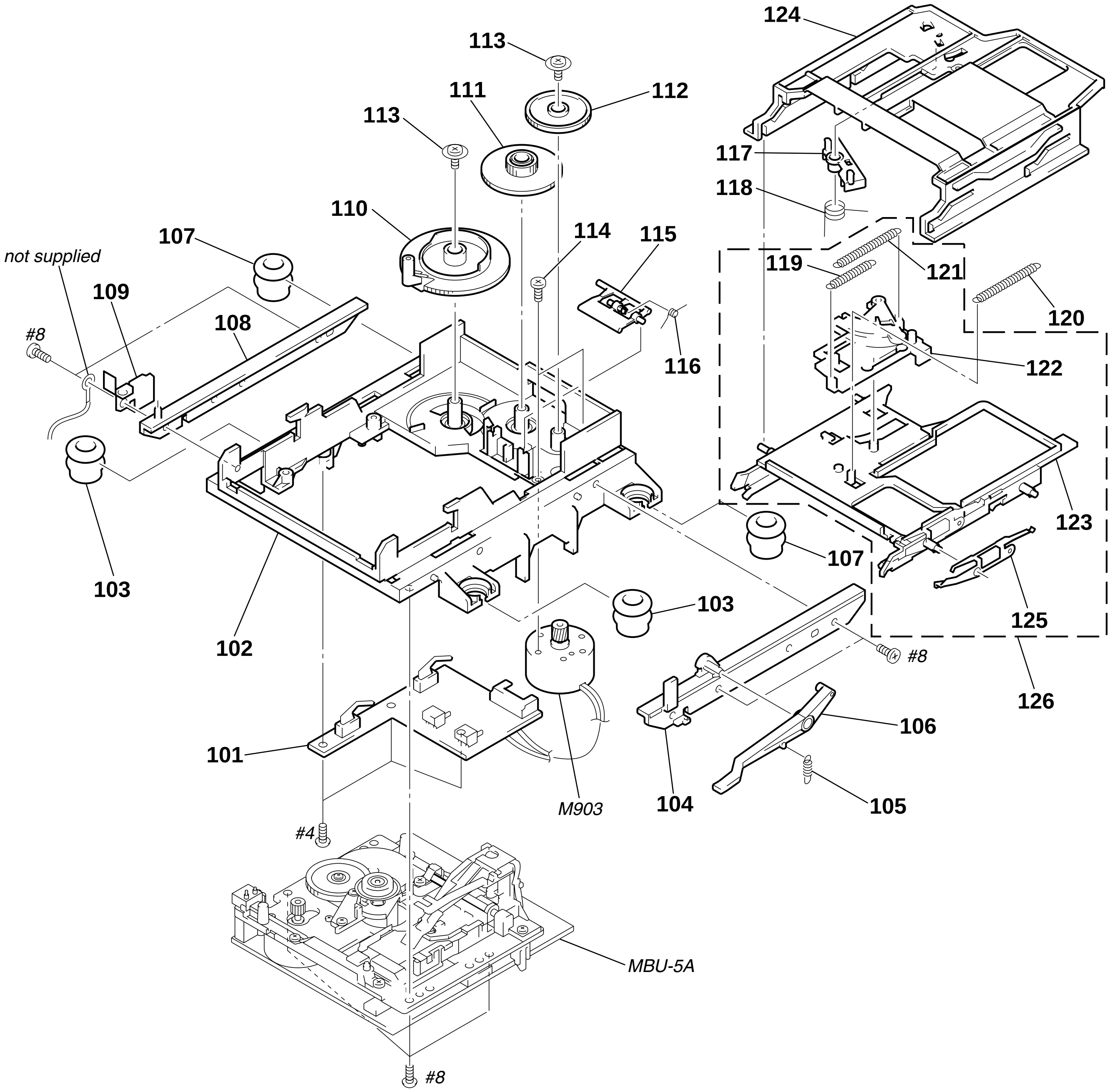


以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
51	A-4426-076-A	AMP BOARD, COMPLETE	
52	A-4426-081-A	POWER BOARD, COMPLETE (AEP,UK)	
52	A-4426-088-A	POWER BOARD, COMPLETE (EXCEPT AEP,UK)	
53	4-221-082-11	PANEL, BACK (AEP,UK)	
53	4-221-082-31	PANEL, BACK (EXCEPT AEP,UK)	
* 54	4-930-336-71	FOOT (FELT)	
55	1-674-628-11	SP BOARD	
56	A-4426-080-A	MAIN BOARD, COMPLETE (AEP,UK)	
56	A-4426-087-A	MAIN BOARD, COMPLETE (AUS,AR,HK,MY,SP,KR,CH)	
56	A-4426-756-A	MAIN BOARD, COMPLETE (JE)	
57	1-693-473-41	TUNER (EXCEPT JE)	
58	3-703-244-00	BUSHING (2104), CORD	
59	1-773-115-11	WIRE(FLAT TYPE) (19 CORE)	
60	1-773-006-11	WIRE(FLAT TYPE) (15 CORE)	
61	1-569-972-21	SOCKET, SHORT 2P	
⚠62	1-696-847-11	CORD, POWER (AUS)	
⚠62	1-769-744-11	CORD, POWER (AEP,UK,HK,JE,MY,SP,KR,CH)	
⚠62	1-783-941-11	CORD, POWER (AR)	
63	1-569-008-21	ADAPTOR, CONVERSION 2P (JE)	
63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK,HK)	
⚠T901	1-433-965-11	TRANSFORMER, POWER (AEP,UK)	
⚠T901	1-433-966-11	TRANSFORMER, POWER (EXCEPT AEP,UK)	
⚠T900	1-433-969-11	TRANSFORMER, SUB POWER (AEP,UK)	
⚠T900	1-433-970-11	TRANSFORMER, SUB POWER (EXCEPT AEP,UK)	

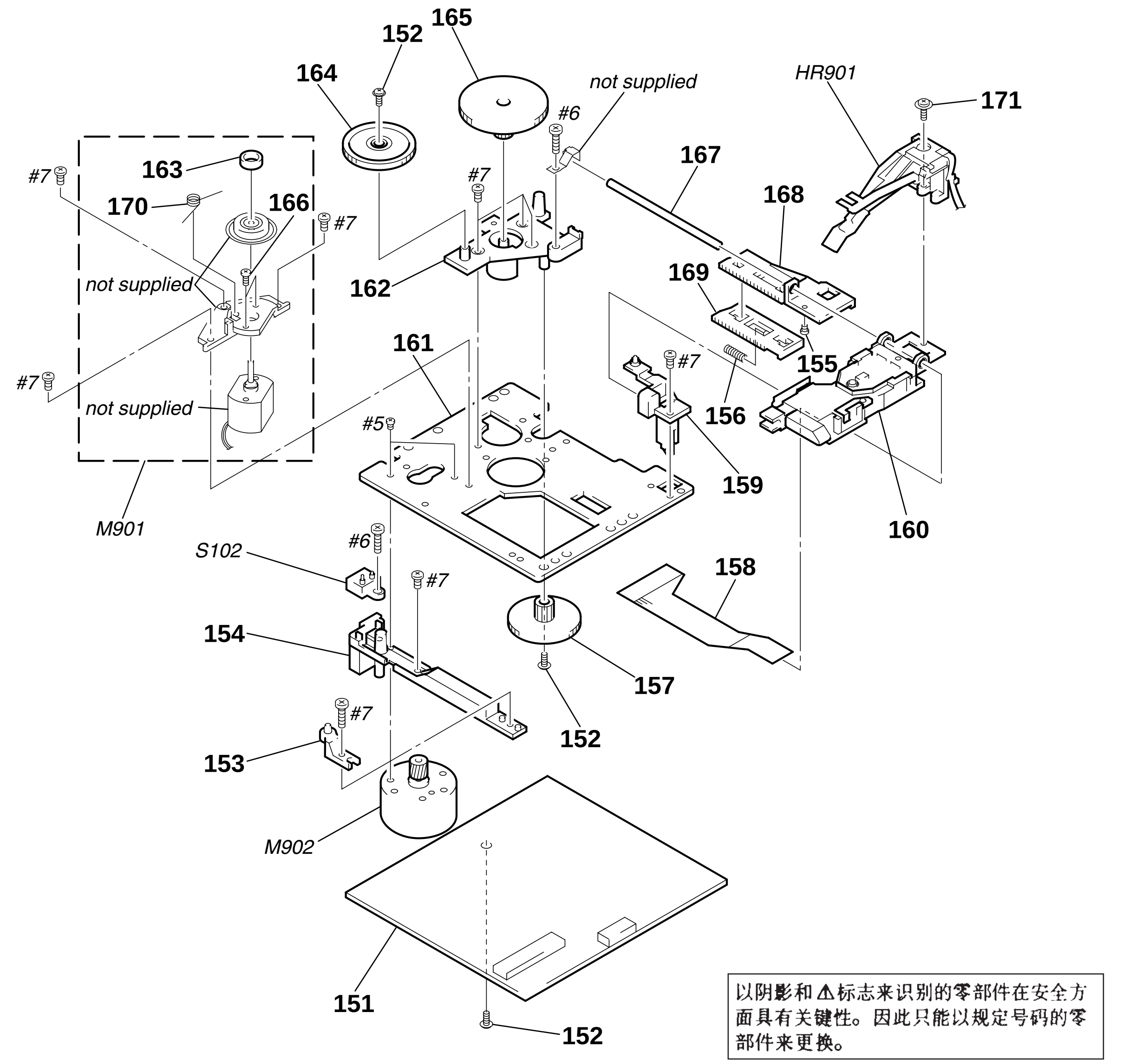
7-3. MD MECHANISM DECK (MDM-5A)



Ref. No.	Part No.	Description	Remark
* 101	1-668-111-11	SW BOARD	
* 102	4-996-217-01	CHASSIS	
103	4-996-223-01	INSULATOR (F)	
* 104	4-996-218-01	BRACKET (GUIDE R)	
105	4-996-277-01	SPRING (O/C), TENSION	
106	4-996-226-01	LEVER (O/C)	
107	4-999-347-01	INSULATOR (R)	
* 108	4-996-225-01	BRACKET (GUIDE L)	
109	4-988-466-21	SPRING (ELECTROSTATIC), LEAF	
110	4-996-219-01	GEAR (CAM GEAR)	
111	4-996-220-01	GEAR (A)	
112	4-996-221-01	GEAR (B)	
113	4-933-134-01	SCREW (+PTPWH M2.6X6)	
114	4-996-224-01	SCREW (1.7X3), +PWH	
115	4-996-227-01	LEVER (HEAD)	

Ref. No.	Part No.	Description	Remark
116	4-996-229-01	SPRING (HEAD LEVER), TORSION	
117	4-996-212-01	LEVER (LIMITTER)	
118	4-996-213-01	SPRING (LIMITTER), TORSION	
119	4-996-214-01	SPRING (SLIDER), TENSION	
120	4-996-216-01	SPRING (HOLDER), TENSION	
121	4-210-396-01	SPRING (LOCK), TENSION	
122	X-4951-631-1	SLIDER ASSY	
* 123	X-4949-245-7	HOLDER ASSY	
* 124	4-996-211-01	SLIDER (CAM)	
125	4-998-763-01	SPRING (SHUTTER), LEAF	
126	A-4680-417-A	HOLDER COMPLETE ASSY	
M903	X-4949-264-1	MOTOR ASSY, LOADING	

7-4. MD BASE UNIT (MBU-5A)



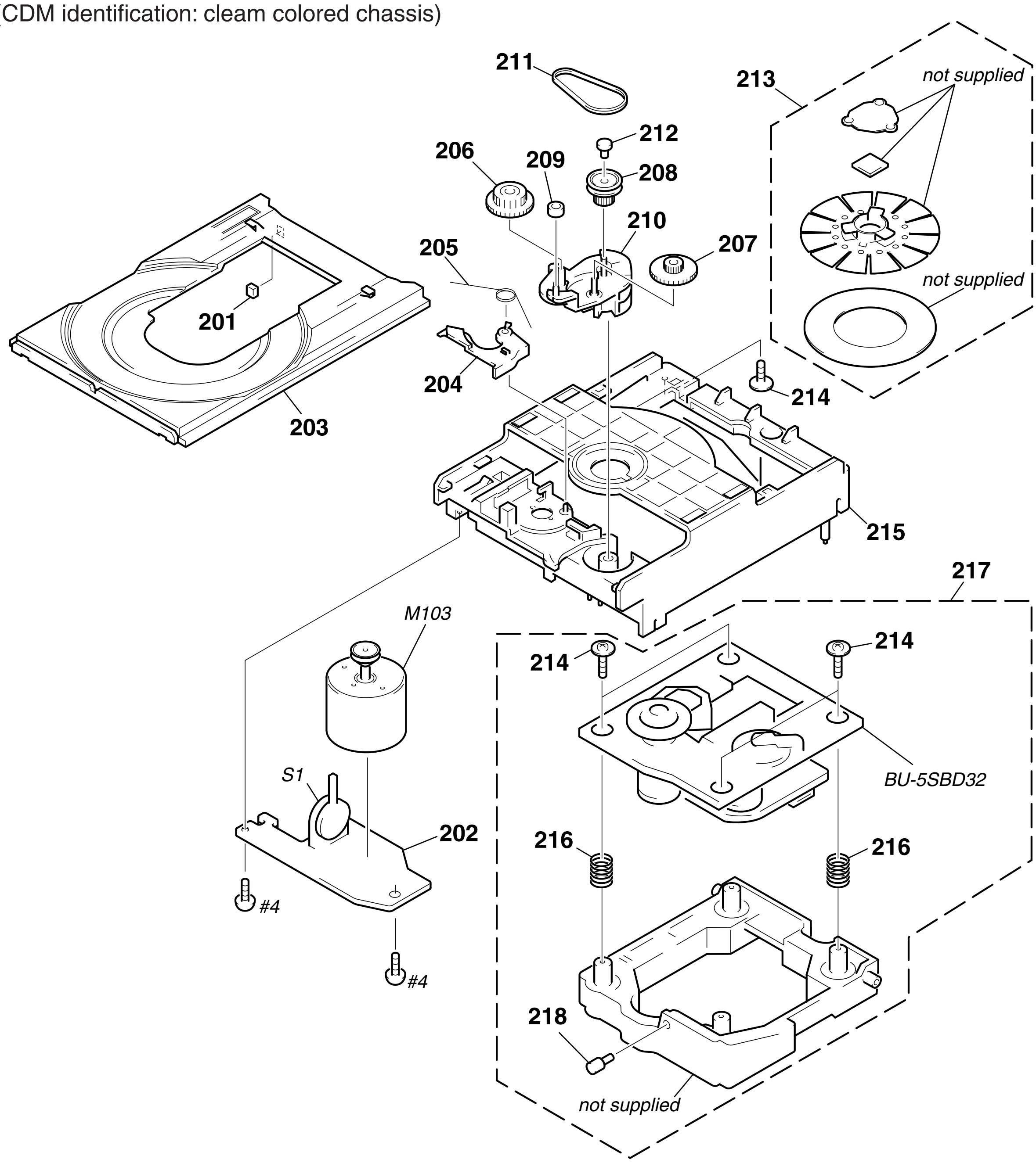
以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 151	A-4699-893-A	BD (MD) BOARD, COMPLETE	
152	3-372-761-01	SCREW (M1.7), TAPPING	
* 153	4-996-267-01	BASE (BU-D)	
* 154	4-996-255-01	BASE (BU-C)	
155	4-900-590-01	SCREW, PRECISION SMALL	
156	4-996-258-01	SPRING, COMPRESSION	
157	4-996-262-01	GEAR (SL-C)	
158	1-667-954-11	FLEXIBLE BOARD	
* 159	4-210-664-01	BASE (BU-A)	
⚠ 160	8-583-058-01	OPTICAL PICK-UP KMS-260B/J1N	
* 161	4-996-252-01	CHASSIS, BU	
* 162	4-996-254-01	BASE (BU-B)	
163	4-967-688-11	MAGNET, ABSORPTION	
164	4-996-260-01	GEAR (SL-A)	
165	4-996-261-01	GEAR (SL-B)	
166	4-211-036-01	SCREW (1.7X2.5), +PWH	
167	4-996-265-01	SHAFT, MAIN	
168	4-996-256-01	SL(BASE)	
169	4-996-257-01	RACK (SL)	
170	4-996-263-01	SPRING (CLV), TORSION	
171	4-988-560-01	SCREW (+P 1.7X6)	
HR901	1-500-502-11	HEAD, OVER WRITE	
HR901	1-500-502-21	HEAD, OVER WRITE	
S901	1-762-148-21	SWITCH, PUSH (2 KEY)	
M901	A-4672-474-A	MOTOR ASSY, SLED	
M902	A-4672-475-A	MOTOR ASSY, SPINDLE	

7-5. CD MECHANISM DECK (CDM55A-5SBD32)

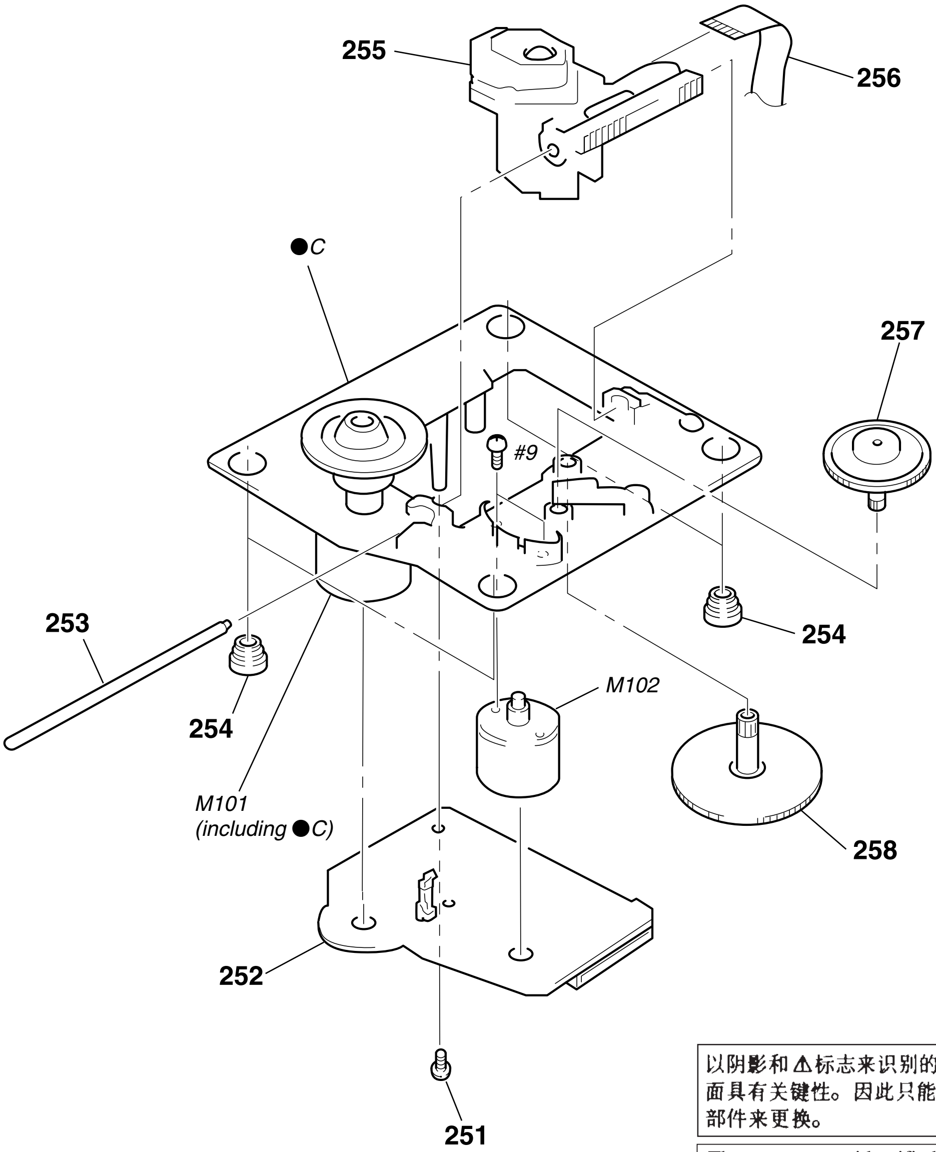
(CDM identification: cleam colored chassis)



Ref. No.	Part No.	Description	Remark
201	4-925-315-31	DAMPER	
202	1-674-336-11	LOADING BOARD	
203	4-220-231-01	TRA Y (CDM)	
204	4-220-229-01	LEVER (SW)	
205	4-220-239-01	SPRING, TORSION	
206	4-220-237-01	GEAR (A)	
207	4-220-238-01	GEAR (B)	
208	4-220-234-01	PULLEY (LDG)	
209	4-221-815-01	ROLLER	
210	4-220-233-01	CAM (CDM55)	
211	4-221-816-01	BEL T (CDM55)	
212	4-221-916-01	BUSHING	
213	A-4672-773-A	PULLEY (A T) ASSY	
214	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
215	4-220-230-01	CHASSIS	
216	4-959-996-01	SPRING (932), COMPRESSION	
217	A-4672-772-A	HOLDER (BU) ASSY	
218	4-221-817-02	SHAFT (BU)	
M103	A-4672-771-A	MOTOR (LD) ASSY (LOADING)	
S1	1-771-799-11	SWITCH, LEVER (SLIDE)(LOADING SWITCH)	

7-6. CD BASE UNIT (BU-5SBD32)

(BU identification: black plastic turntable with magnet)



以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

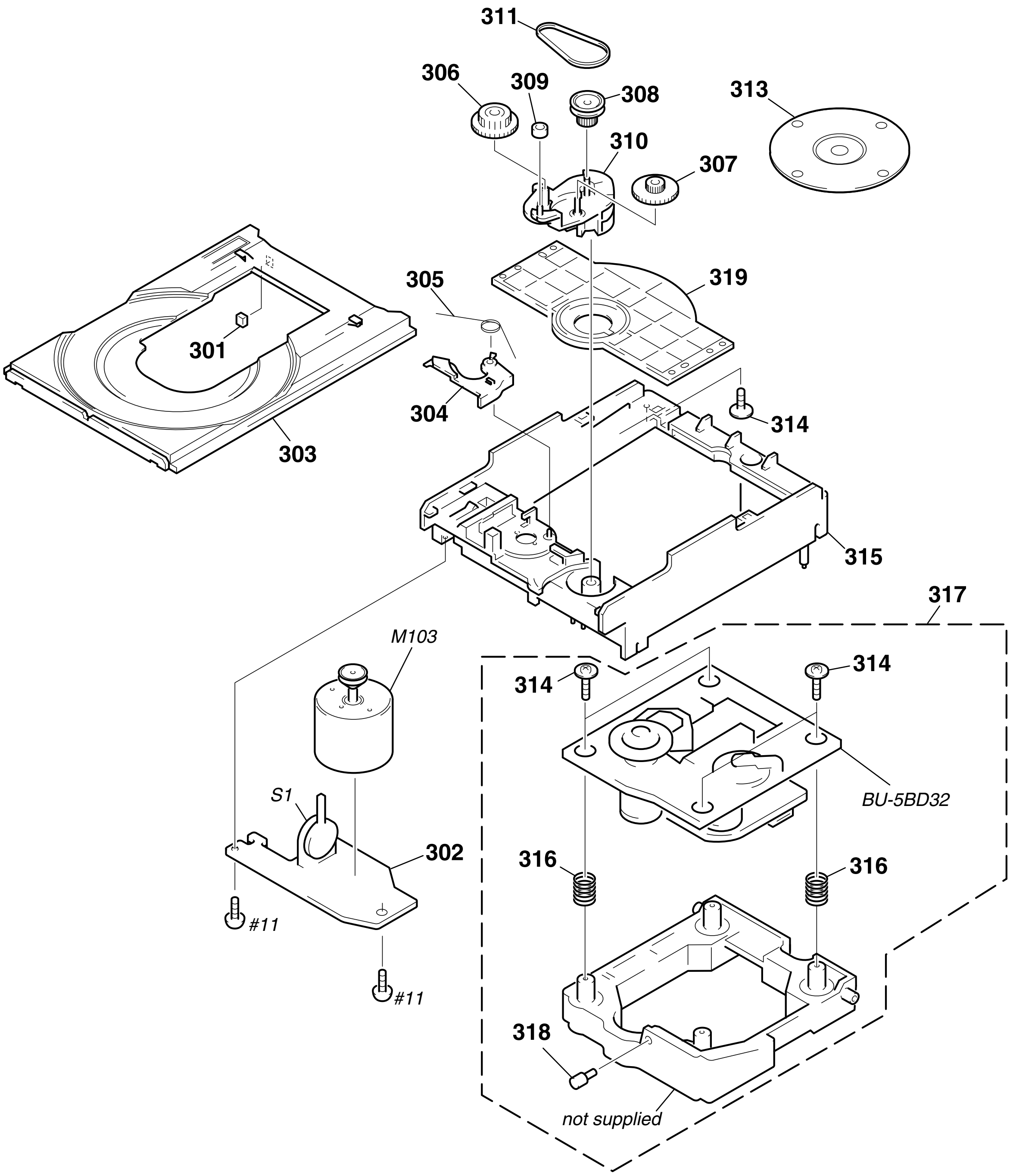
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety .
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
251	4-951-620-01	SCREW (2.6X8), +BVTP	
* 252	A-4724-375-A	BD (CD) BOARD, COMPLETE	
253	4-917-565-01	SHAFT, SLED	
254	4-951-940-01	INSULATOR (BU)	
⚠255	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP	

Ref. No.	Part No.	Description	Remark
256	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
257	4-917-567-01	GEAR (M)	
258	4-917-564-01	GEAR (P), FLATNESS	
M101	X-4952-989-1	BASE (OUTSART) ASSY (SPINDLE)	
M102	A-4917-504-1	MOTOR ASSY (SLED)	

7-7. CD MECHANISM DECK (CDM55C-5BD32)

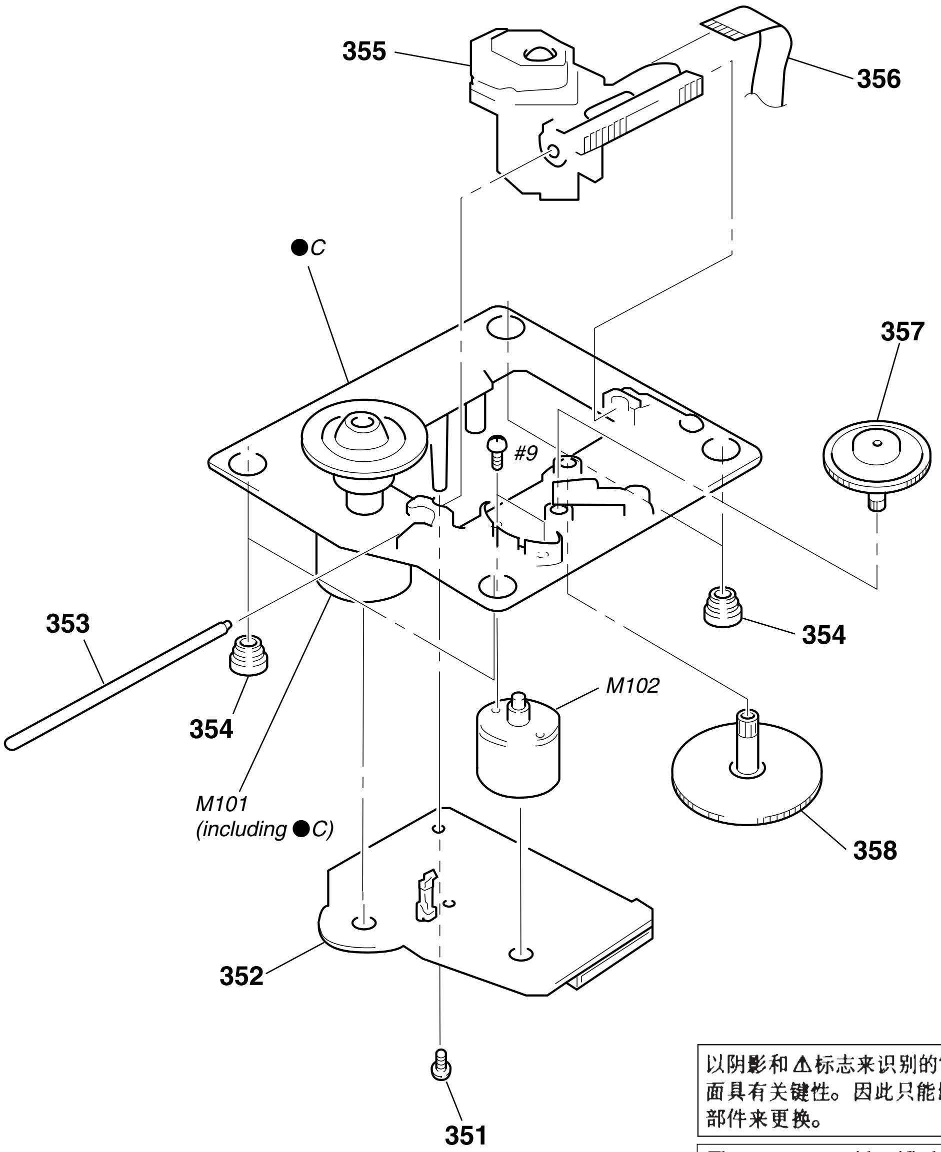
(CDM identification: black colored holder (AT) (319), pulley (313) with magnet)



Ref. No.	Part No.	Description	Remark
301	4-925-315-41	DAMPER	
302	1-674-336-11	LOADING BOARD	
303	4-224-894-11	TRAY (CDM55D)	
304	4-220-229-01	LEVER (SW)	
305	4-220-239-01	SPRING, TORSION	
306	4-220-237-01	GEAR (A)	
307	4-220-238-01	GEAR (B)	
308	4-220-234-01	PULLEY (LDG)	
309	4-221-815-11	ROLLER	
310	4-220-233-01	CAM (CDM55)	
311	4-221-816-11	BELT (CDM55)	
313	1-452-925-21	MAGNET ASSY	
314	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
315	4-227-236-01	CHASSIS	
316	4-923-109-01	SPRING (BU5), COMPRESSION	
317	A-4672-993-A	HOLDER (BU) ASSY	
318	4-221-817-11	SHAFT (BU)	
319	4-227-218-21	HOLDER (AT)	
M103	A-4672-771-A	MOTOR (LD) ASSY (LOADING)	
S1	1-771-799-11	SWITCH, LEVER (SLIDE)(LOADING SWITCH)	

7-8. CD BASE UNIT (BU-5BD32)

(BU identification: metal turntable without magnet)



以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety .
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
351	4-951-620-01	SCREW (2.6X8), +BVTP	
* 352	A-4724-375-A	BD (CD) BOARD, COMPLETE	
353	4-917-565-01	SHAFT, SLED	
354	4-951-940-01	INSULATOR (BU)	
⚠355	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP	

Ref. No.	Part No.	Description	Remark
356	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
357	4-917-567-01	GEAR (M)	
358	4-917-564-01	GEAR (P), FLATNESS	
M101	X-4952-989-1	BASE (OUTSART) ASSY (SPINDLE)	
M102	A-4917-504-1	MOTOR ASSY (SLED)	

ELECTRICAL PARTS LIST

AMP

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
  uPC...: μ PC..., uPD...: μ PD...

- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation
  HK : Hong Kong model
  SP : Singapore model
  MY : Malaysia model
  AR : Argentine model
  AUS : Australian model
  KR : Korea model
  CH : Chinese model
  JE : Tourist model

Ref. No.	Part No.	Description			Remark
	A-4426-076-A	AMP BOARD, COMPLETE			
		********************			
	1-533-293-11	FUSE HOLDER			
		< CAPACITOR >			
C801	1-124-721-11	ELECT	10uF	20%	50V
C802	1-162-286-31	CERAMIC	220PF	10%	50V
C803	1-126-964-11	ELECT	10uF	20%	50V
C804	1-162-288-31	CERAMIC	330PF	10%	50V
C805	1-126-051-11	ELECT	47uF	20%	50V
C806	1-126-051-11	ELECT	47uF	20%	50V
C807	1-136-495-11	FILM	0.068uF	5%	50V
C808	1-136-495-11	FILM	0.068uF	5%	50V
C821	1-126-965-11	ELECT	22uF	20%	50V
C822	1-126-052-11	ELECT	100uF	20%	50V
C823	1-136-165-00	FILM	0.1uF	5%	50V
C824	1-164-159-11	CERAMIC	0.1uF		50V
C831	1-126-052-11	ELECT	100uF	20%	50V
C832	1-136-165-00	FILM	0.1uF	5%	50V
C833	1-127-734-51	ELECT MELF	4700uF	20%	35V
C834	1-136-165-00	FILM	0.1uF	5%	50V
C835	1-127-734-51	ELECT MELF	4700uF	20%	35V
C836	1-136-165-00	FILM	0.1uF	5%	50V
C841	1-126-960-11	ELECT	1uF	20%	50V
C851	1-124-721-11	ELECT	10uF	20%	50V
C852	1-162-286-31	CERAMIC	220PF	10%	50V
C853	1-126-964-11	ELECT	10uF	20%	50V
C854	1-162-288-31	CERAMIC	330PF	10%	50V
C855	1-126-051-11	ELECT	47uF	20%	50V
C856	1-126-051-11	ELECT	47uF	20%	50V
C857	1-136-495-11	FILM	0.068uF	5%	50V
C858	1-136-495-11	FILM	0.068uF	5%	50V
C871	1-126-933-11	ELECT	100uF	20%	16V
		< CONNECTOR >			
CN801	1-770-731-11	CONNECTOR, BOARD TO BOARD 12P			
* CN802	1-564-518-11	PLUG, CONNECTOR 3P			
		< DIODE >			
D801	8-719-911-19	DIODE 1SS133T-72			
D802	8-719-911-19	DIODE 1SS133T-72			
D832	8-719-025-03	DIODE RBA-402			
D851	8-719-911-19	DIODE 1SS133T-72			
D852	8-719-911-19	DIODE 1SS133T-72			

Ref. No.	Part No.	Description				Remark
		< FUSE >				
⚠F801	1-532-504-31	FUSE (T4AL/250V)				
⚠F802	1-532-504-31	FUSE (T4AL/250V)				
		< IC >				
IC801	8-749-920-13	IC STK4132MK2				
		< TRANSISTOR >				
Q801	8-729-044-08	TRANSISTOR	2SD1915(F)-T(TA).SO			
Q802	8-729-620-05	TRANSISTOR	2SC2603TP-EF			
Q841	8-729-900-80	TRANSISTOR	UN4211-TA			
Q851	8-729-044-08	TRANSISTOR	2SD1915(F)-T(TA).SO			
Q852	8-729-620-05	TRANSISTOR	2SC2603TP-EF			
Q871	8-729-119-76	TRANSISTOR	2SA1115TP-EF			
Q872	8-729-620-05	TRANSISTOR	2SC2603TP-EF			
Q873	8-729-620-05	TRANSISTOR	2SC2603TP-EF			
		< RESISTOR >				
R801	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R802	1-249-429-11	CARBON	10K	5%	1/4W	
R803	1-249-437-11	CARBON	47K	5%	1/4W	
R804	1-249-437-11	CARBON	47K	5%	1/4W	
R805	1-249-417-11	CARBON	1K	5%	1/4W	F
R806	1-249-437-11	CARBON	47K	5%	1/4W	
R807	1-260-103-11	CARBON	2.2K	5%	1/2W	
R808	1-260-103-11	CARBON	2.2K	5%	1/2W	
⚠R809	1-217-151-00	METAL	0.22	10%	2W	
R810	1-249-417-11	CARBON	1K	5%	1/4W	F
R811	1-249-431-11	CARBON	15K	5%	1/4W	
R812	1-260-076-11	CARBON	10	5%	1/2W	
⚠R821	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R822	1-260-099-11	CARBON	1K	5%	1/2W	
R823	1-260-099-11	CARBON	1K	5%	1/2W	
R824	1-249-441-11	CARBON	100K	5%	1/4W	
R825	1-249-433-11	CARBON	22K	5%	1/4W	
⚠R831	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R841	1-249-437-11	CARBON	47K	5%	1/4W	
R842	1-249-437-11	CARBON	47K	5%	1/4W	
R843	1-249-441-11	CARBON	100K	5%	1/4W	
R844	1-247-807-31	CARBON	100	5%	1/4W	
R845	1-249-441-11	CARBON	100K	5%	1/4W	
R851	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R852	1-249-429-11	CARBON	10K	5%	1/4W	

AMP   BD (CD)

Ref. No.	Part No.	Description			Remark
R853	1-249-437-11	CARBON	47K	5%	1/4W
R854	1-249-437-11	CARBON	47K	5%	1/4W
R855	1-249-417-11	CARBON	1K	5%	1/4W F
R856	1-249-437-11	CARBON	47K	5%	1/4W
R857	1-260-103-11	CARBON	2.2K	5%	1/2W
R858	1-260-103-11	CARBON	2.2K	5%	1/2W
⚠R859	1-217-151-00	METAL	0.22	10%	2W
R860	1-249-417-11	CARBON	1K	5%	1/4W F
R861	1-249-431-11	CARBON	15K	5%	1/4W
R862	1-260-076-11	CARBON	10	5%	1/2W
R871	1-249-441-11	CARBON	100K	5%	1/4W
R872	1-249-429-11	CARBON	10K	5%	1/4W
R873	1-249-439-11	CARBON	68K	5%	1/4W
R874	1-249-437-11	CARBON	47K	5%	1/4W

****

Ref. No.	Part No.	Description			Remark
*	A-4724-375-A	BD (CD) BOARD, COMPLETE			
		***********************			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C104	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C110	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C114	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT CHIP	100uF	20%	4V
C118	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C119	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C122	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C123	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C124	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C125	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C126	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C127	1-128-065-11	ELECT CHIP	68uF	20%	10V
C128	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C129	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C130	1-164-346-11	CERAMIC CHIP	1uF		16V
C131	1-124-779-00	ELECT CHIP	10uF	20%	16V
C133	1-164-346-11	CERAMIC CHIP	1uF		16V
C140	1-164-346-11	CERAMIC CHIP	1uF		16V
C141	1-164-346-11	CERAMIC CHIP	1uF		16V
C143	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C153	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C154	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C156	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C157	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-126-206-11	ELECT CHIP	100uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C162	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C163	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C165	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C167	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C168	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C171	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C172	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C181	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C182	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
		< CONNECTOR >			
CN101	1-778-874-11	CONNECTOR,FFC(LIF(NON-ZIF))19P			
CN102	1-777-937-11	CONNECTOR, FFC/FPC 16P			
		< FERRITE BEAD >			
FB101	1-500-445-21	FERRITE	0UH		
FB102	1-216-295-91	SHORT	0		
FB103	1-500-445-21	FERRITE	0UH		
FB104	1-216-295-91	SHORT	0		
		< IC >			
IC101	8-752-386-85	IC CXD2587Q			
IC102	8-759-549-28	IC BA5974FP-E2			
IC103	8-752-085-51	IC CXA2568M-T6			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR	MSB710-RT1		
		< RESISTOR >			
R101	1-216-077-91	RES,CHIP	15K	5%	1/10W
R102	1-216-097-91	RES,CHIP	100K	5%	1/10W
R103	1-216-077-91	RES,CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-049-91	RES,CHIP	1K	5%	1/10W
R107	1-216-073-00	METAL CHIP	10K	5%	1/10W
R108	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R109	1-216-121-91	RES,CHIP	1M	5%	1/10W
R110	1-216-025-91	RES,CHIP	100	5%	1/10W
R111	1-216-121-91	RES,CHIP	1M	5%	1/10W
R113	1-216-121-91	RES,CHIP	1M	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R116	1-216-001-00	METAL CHIP	10	5%	1/10W
R117	1-216-049-91	RES,CHIP	1K	5%	1/10W
R119	1-216-041-00	METAL CHIP	470	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-91	RES,CHIP	100K	5%	1/10W
R131	1-216-033-00	METAL CHIP	220	5%	1/10W
R135	1-216-295-91	SHORT	0		
R136	1-216-295-91	SHORT	0		
R137	1-216-295-91	SHORT	0		
R138	1-216-295-91	SHORT	0		
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W
R147	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-001-00	METAL CHIP	10	5%	1/10W

Ref. No.	Part No.	Description			Remark
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
R171	1-216-078-00	RES,CHIP	16K	5%	1/10W
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W
R173	1-216-077-91	RES,CHIP	15K	5%	1/10W
R181	1-216-078-00	RES,CHIP	16K	5%	1/10W
R182	1-216-073-00	METAL CHIP	10K	5%	1/10W
R183	1-216-077-91	RES,CHIP	15K	5%	1/10W
		< NETWORK >			
RN101	1-233-576-11	RES, CHIP NETWORK 100			
RN102	1-233-576-11	RES, CHIP NETWORK 100			
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN SW)			
		< VIBRATOR >			
X101	1-767-408-21	VIBRATOR, CRYSTAL (16.9344MHz)			

****

Ref. No.	Part No.	Description			Remark
*	A-4699-893-A	BD (MD) BOARD, COMPLETE			
		**********************			
		< CAPACITOR >			
C101	1-125-822-11	TANTALUM	10uF	20%	10V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-125-822-11	TANTALUM	10uF	20%	10V
C104	1-125-822-11	TANTALUM	10uF	20%	10V
C105	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C106	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C107	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C108	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C109	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C111	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C112	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C113	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C115	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C116	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C117	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C118	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C119	1-125-822-11	TANTALUM	10uF	20%	10V
C121	1-125-822-11	TANTALUM	10uF	20%	10V
C122	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C124	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C127	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C128	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C129	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C130	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C131	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C132	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C133	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C135	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C136	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C142	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C143	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C144	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C146	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C152	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C153	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C156	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C158	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C160	1-104-601-11	ELECT CHIP	10uF	20%	10V
C161	1-104-601-11	ELECT CHIP	10uF	20%	10V
C163	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C164	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C167	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C168	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C169	1-125-822-11	TANTALUM	10uF	20%	10V
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C181	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C183	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C184	1-117-970-11	ELECT CHIP	22uF	20%	10V
C185	1-164-611-11	CERAMIC CHIP	0.001uF	10%	500V
C187	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C188	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C189	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C190	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C191	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C196	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C197	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-569-479-21	CONNECTOR, FPC 21P			
CN102	1-784-833-21	CONNECTOR,FFC(LIF(NON-ZIF))21P			
CN103	1-784-834-21	CONNECTOR,FFC(LIF(NON-ZIF))23P			
CN104	1-770-687-11	CONNECTOR, FFC/FPC 4P			
CN110	1-695-440-21	PIN, CONNECTOR (PC BOARD) 6P			
		< DIODE >			
D101	8-719-988-61	DIODE 1SS355TE-17			
D181	8-719-046-86	DIODE F1J6TP			
D183	8-719-046-86	DIODE F1J6TP			
		< IC >			
IC101	8-752-080-95	IC CXA2523AR			
IC103	8-729-903-10	TRANSISTOR FMW1-T-148			
IC121	8-752-389-44	IC CXD2654R			
IC123	8-759-096-87	IC TC7WU04FU(TE12R)			
IC124	8-759-498-44	IC MSM51V4400-70TS-K			
IC152	8-759-430-25	IC BH6511FS-E2			
IC171	8-759-487-04	IC BR24C02F-E2			
IC181	8-759-481-17	IC MC74ACT08DTR2			
IC192	8-759-460-72	IC BA033FP-E2			
		< COIL >			
L101	1-414-813-11	FERRITE	0uH		
L102	1-414-813-11	FERRITE	0uH		
L103	1-414-813-11	FERRITE	0uH		
L105	1-414-813-11	FERRITE	0uH		

BD (MD) MD DIGITAL

Ref. No.	Part No.	Description			Remark
L106	1-414-813-11	FERRITE	0uH		
L121	1-414-813-11	FERRITE	0uH		
L122	1-414-813-11	FERRITE	0uH		
L151	1-412-029-11	INDUCTOR CHIP	10uH		
L152	1-412-029-11	INDUCTOR CHIP	10uH		
L153	1-412-032-11	INDUCTOR CHIP	100uH		
L154	1-412-032-11	INDUCTOR CHIP	100uH		
L161	1-414-813-11	FERRITE	0uH		
L162	1-414-813-11	FERRITE	0uH		
L181	1-216-295-91	SHORT	0		
		< TRANSISTOR >			
Q101	8-729-403-35	TRANSISTOR	UN5113-TX		
Q102	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
Q103	8-729-402-93	TRANSISTOR	UN5214-TX		
Q104	8-729-402-93	TRANSISTOR	UN5214-TX		
Q162	8-729-101-07	TRANSISTOR	2SB798-T1DK		
Q163	8-729-403-35	TRANSISTOR	UN5113-TX		
Q181	8-729-018-75	TRANSISTOR	2SJ278MYTR		
Q182	8-729-017-65	TRANSISTOR	2SK1764KYTR		
		< RESISTOR >			
R103	1-216-049-91	RES,CHIP	1K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R106	1-216-133-00	METAL CHIP	3.3M	5%	1/10W
R107	1-216-113-00	METAL CHIP	470K	5%	1/10W
R109	1-216-295-91	SHORT	0		
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-295-91	SHORT	0		
R112	1-216-089-91	RES,CHIP	47K	5%	1/10W
R113	1-216-049-91	RES,CHIP	1K	5%	1/10W
R115	1-216-049-91	RES,CHIP	1K	5%	1/10W
R117	1-216-113-00	METAL CHIP	470K	5%	1/10W
R120	1-216-025-91	RES,CHIP	100	5%	1/10W
R121	1-216-097-91	RES,CHIP	100K	5%	1/10W
R123	1-216-295-91	SHORT	0		
R124	1-216-025-91	RES,CHIP	100	5%	1/10W
R125	1-216-025-91	RES,CHIP	100	5%	1/10W
R127	1-216-025-91	RES,CHIP	100	5%	1/10W
R129	1-216-295-91	SHORT	0		
R130	1-216-295-91	SHORT	0		
R131	1-216-073-00	METAL CHIP	10K	5%	1/10W
R132	1-216-097-91	RES,CHIP	100K	5%	1/10W
R133	1-216-117-00	METAL CHIP	680K	5%	1/10W
R134	1-216-049-91	RES,CHIP	1K	5%	1/10W
R135	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R136	1-216-049-91	RES,CHIP	1K	5%	1/10W
R137	1-216-295-91	SHORT	0		
R140	1-216-029-00	METAL CHIP	150	5%	1/10W
R142	1-216-073-00	METAL CHIP	10K	5%	1/10W
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W
R144	1-216-025-91	RES,CHIP	100	5%	1/10W
R145	1-216-073-00	METAL CHIP	10K	5%	1/10W
R146	1-216-037-00	METAL CHIP	330	5%	1/10W
R147	1-216-025-91	RES,CHIP	100	5%	1/10W
R148	1-216-045-00	METAL CHIP	680	5%	1/10W

Ref. No.	Part No.	Description			Remark
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R150	1-216-295-91	SHORT	0		
R151	1-216-073-00	METAL CHIP	10K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R158	1-216-097-91	RES,CHIP	100K	5%	1/10W
R159	1-216-097-91	RES,CHIP	100K	5%	1/10W
R160	1-216-295-91	SHORT	0		
R161	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R162	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R164	1-216-045-00	METAL CHIP	680	5%	1/10W
R165	1-216-097-91	RES,CHIP	100K	5%	1/10W
R167	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R169	1-219-724-11	METAL CHIP	1	1%	1/4W
R170	1-216-073-00	METAL CHIP	10K	5%	1/10W
R171	1-216-073-00	METAL CHIP	10K	5%	1/10W
R173	1-216-121-91	RES,CHIP	1M	5%	1/10W
R175	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R177	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R179	1-216-085-00	METAL CHIP	33K	5%	1/10W
R180	1-216-073-00	METAL CHIP	10K	5%	1/10W
R182	1-216-089-91	RES,CHIP	47K	5%	1/10W
R183	1-216-089-91	RES,CHIP	47K	5%	1/10W
R184	1-216-073-00	METAL CHIP	10K	5%	1/10W
R185	1-216-081-00	METAL CHIP	22K	5%	1/10W
R186	1-216-089-91	RES,CHIP	47K	5%	1/10W
R188	1-216-073-00	METAL CHIP	10K	5%	1/10W
R189	1-216-073-00	METAL CHIP	10K	5%	1/10W
R190	1-216-073-00	METAL CHIP	10K	5%	1/10W
R195	1-216-073-00	METAL CHIP	10K	5%	1/10W
R196	1-216-295-91	SHORT	0		
R197	1-216-295-91	SHORT	0		
R198	1-216-296-91	SHORT	0		
		< SWITCH >			
S101	1-762-596-21	SWITCH, PUSH (1 KEY)			

****

*	A-4426-083-A	MD DIGITAL BOARD, COMPLETE			
		**************************			
		< CAPACITOR >			
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C172	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C201	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C202	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C203	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C216	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C341	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C342	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C343	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C350	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C351	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C352	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C353	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C355	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C357	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V

Ref. No.	Part No.	Description			Remark
C358	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C359	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C360	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C362	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C363	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C503	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C509	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C510	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C522	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C527	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C528	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C529	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C2001	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
CN101	1-793-311-11	CONNECTOR,FFC(LIF(NON-ZIF))25P			
CN102	1-784-687-41	PIN, CONNECTOR (PC BOARD) 7P			
CN103	1-784-834-21	CONNECTOR,FFC(LIF(NON-ZIF))23P			
CN104	1-784-833-21	CONNECTOR,FFC(LIF(NON-ZIF))21P			
		< IC >			
IC153	8-759-481-19	IC LB1830M-S-TE-L			
IC201	8-759-553-65	IC UDA1341TS			
IC202	8-759-564-53	IC MC74HCU04ADTR2			
IC316	8-759-643-90	IC M30624MG-A13FP			
		< COIL >			
L181	1-424-675-11	INDUCTOR	33uH		
L201	1-500-445-21	FERRITE	0uH		
L202	1-500-445-21	FERRITE	0uH		
		< TRANSISTOR >			
Q350	8-729-028-99	TRANSISTOR	RT1N144M-TP-1		
		< RESISTOR >			
R201	1-216-121-91	RES,CHIP	1M	5%	1/10W
R202	1-216-041-00	METAL CHIP	470	5%	1/10W
R203	1-216-049-91	RES,CHIP	1K	5%	1/10W
R204	1-216-089-91	RES,CHIP	47K	5%	1/10W
R205	1-216-113-00	METAL CHIP	470K	5%	1/10W
R207	1-216-025-91	RES,CHIP	100	5%	1/10W
R210	1-216-041-00	METAL CHIP	470	5%	1/10W
R330	1-216-073-00	METAL CHIP	10K	5%	1/10W
R331	1-216-097-91	RES,CHIP	100K	5%	1/10W
R333	1-216-073-00	METAL CHIP	10K	5%	1/10W
R349	1-216-073-00	METAL CHIP	10K	5%	1/10W
R351	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R352	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R353	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R358	1-216-073-00	METAL CHIP	10K	5%	1/10W
R361	1-216-073-00	METAL CHIP	10K	5%	1/10W
R363	1-216-073-00	METAL CHIP	10K	5%	1/10W
R366	1-216-097-91	RES,CHIP	100K	5%	1/10W
R367	1-216-097-91	RES,CHIP	100K	5%	1/10W
R370	1-216-073-00	METAL CHIP	10K	5%	1/10W
R383	1-216-073-00	METAL CHIP	10K	5%	1/10W
R384	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R385	1-216-073-00	METAL CHIP	10K	5%	1/10W
R386	1-216-073-00	METAL CHIP	10K	5%	1/10W
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W
R395	1-216-073-00	METAL CHIP	10K	5%	1/10W
R400	1-216-073-00	METAL CHIP	10K	5%	1/10W
R816	1-216-174-00	RES,CHIP	100	5%	1/8W
R817	1-216-174-00	RES,CHIP	100	5%	1/8W
R818	1-216-174-00	RES,CHIP	100	5%	1/8W
R819	1-216-174-00	RES,CHIP	100	5%	1/8W
R2002	1-216-073-00	METAL CHIP	10K	5%	1/10W
R2004	1-216-041-00	METAL CHIP	470	5%	1/10W
R2005	1-216-025-91	RES,CHIP	100	5%	1/10W
R2006	1-216-025-91	RES,CHIP	100	5%	1/10W
R2007	1-216-025-91	RES,CHIP	100	5%	1/10W
R2008	1-216-073-00	METAL CHIP	10K	5%	1/10W
R2009	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VIBRATOR >			
X201	1-767-286-11	VIBRATOR, CRYSTAL (22MHz)			
X302	1-781-155-21	VIBRATOR, CERAMIC (10MHz)			

****

	1-674-336-11	LOADING BOARD **************			
		< CONNECTOR >			
* CN151	1-568-943-11	PIN, CONNECTOR 5P			
		< SWITCH >			
S1	1-771-799-11	SWITCH, LEVER (SLIDE)			

****

	A-4426-087-A	MAIN BOARD, COMPLETE ******************** (AUS,AR,HK,MY,SP,KR,CH)			
	A-4426-080-A	MAIN BOARD, COMPLETE (AEP,UK) ****************************			
	A-4426-756-A	MAIN BOARD, COMPLETE (JE) *************************			
		< CAPACITOR >			
C101	1-162-282-31	CERAMIC	100PF	10%	50V
C102	1-162-294-31	CERAMIC	0.001uF	10%	50V
C103	1-126-964-11	ELECT	10uF	20%	50V
C121	1-126-933-11	ELECT	100uF	20%	16V
C131	1-164-159-11	CERAMIC	0.1uF		50V
C132	1-162-282-31	CERAMIC	100PF	10%	50V
C141	1-126-933-11	ELECT	100uF	20%	16V
C142	1-126-933-11	ELECT	100uF	20%	16V
C143	1-126-933-11	ELECT	100uF	20%	16V
C144	1-126-964-11	ELECT	10uF	20%	50V
C145	1-126-964-11	ELECT	10uF	20%	50V
C151	1-162-282-31	CERAMIC	100PF	10%	50V
C152	1-162-294-31	CERAMIC	0.001uF	10%	50V
C153	1-126-964-11	ELECT	10uF	20%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C161	1-126-933-11	ELECT	100uF	20%	16V
C166	1-162-282-31	CERAMIC	100PF	10%	50V
C167	1-162-294-31	CERAMIC	0.001uF	10%	50V
C171	1-164-159-11	CERAMIC	0.1uF		50V
C172	1-162-306-11	CERAMIC	0.01uF	30%	16V
C173	1-126-933-11	ELECT	100uF	20%	16V
C174	1-164-159-11	CERAMIC	0.1uF		50V
C175	1-164-159-11	CERAMIC	0.1uF		50V
C301	1-126-964-11	ELECT	10uF	20%	50V
C302	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C303	1-126-964-11	ELECT	10uF	20%	50V
C304	1-130-475-00	MYLAR	0.0022uF	5%	50V
C305	1-124-721-11	ELECT	10uF	20%	50V
C306	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C307	1-126-964-11	ELECT	10uF	20%	50V
C308	1-126-964-11	ELECT	10uF	20%	50V
C309	1-162-282-31	CERAMIC	100PF	10%	50V
C310	1-162-294-31	CERAMIC	0.001uF	10%	50V
C311	1-124-721-11	ELECT	10uF	20%	50V
C312	1-136-165-00	FILM	0.1uF	5%	50V
C313	1-126-957-11	ELECT	0.22uF	20%	50V
C314	1-130-473-00	MYLAR	0.0015uF	5%	50V
C315	1-124-721-11	ELECT	10uF	20%	50V
C316	1-136-165-00	FILM	0.1uF	5%	50V
C317	1-136-165-00	FILM	0.1uF	5%	50V
C323	1-124-721-11	ELECT	10uF	20%	50V
C324	1-124-724-11	ELECT	47uF	20%	50V
C325	1-130-477-00	MYLAR	0.0033uF	5%	50V
C326	1-162-286-31	CERAMIC	220PF	10%	50V
C351	1-126-964-11	ELECT	10uF	20%	50V
C352	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C353	1-126-964-11	ELECT	10uF	20%	50V
C354	1-130-475-00	MYLAR	0.0022uF	5%	50V
C355	1-124-721-11	ELECT	10uF	20%	50V
C356	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C357	1-126-964-11	ELECT	10uF	20%	50V
C358	1-126-964-11	ELECT	10uF	20%	50V
C359	1-162-282-31	CERAMIC	100PF	10%	50V
C360	1-162-294-31	CERAMIC	0.001uF	10%	50V
C361	1-124-721-11	ELECT	10uF	20%	50V
C362	1-136-165-00	FILM	0.1uF	5%	50V
C363	1-126-957-11	ELECT	0.22uF	20%	50V
C364	1-130-473-00	MYLAR	0.0015uF	5%	50V
C365	1-124-721-11	ELECT	10uF	20%	50V
C366	1-136-165-00	FILM	0.1uF	5%	50V
C367	1-136-165-00	FILM	0.1uF	5%	50V
C401	1-126-933-11	ELECT	100uF	20%	16V AEP,UK
C402	1-162-286-31	CERAMIC	220PF	10%	50V AEP,UK
C403	1-126-961-11	ELECT	2.2uF	20%	50V AEP,UK
C404	1-162-291-31	CERAMIC	560PF	10%	50V AEP,UK
C405	1-126-933-11	ELECT	100uF	20%	16V AEP,UK
C406	1-164-031-11	CERAMIC	33PF	5%	50V AEP,UK
C407	1-164-031-11	CERAMIC	33PF	5%	50V AEP,UK
C501	1-164-025-51	CERAMIC	18PF	5%	50V
C502	1-164-025-51	CERAMIC	18PF	5%	50V
C503	1-162-306-11	CERAMIC	0.01uF	30%	16V
C504	1-162-306-11	CERAMIC	0.01uF	30%	16V
C505	1-164-159-11	CERAMIC	0.1uF		50V
C506	1-162-306-11	CERAMIC	0.01uF	30%	16V
C507	1-126-933-11	ELECT	100uF	20%	16V
C508	1-162-282-31	CERAMIC	100PF	10%	50V
C521	1-164-159-11	CERAMIC	0.1uF		50V
C901	1-124-721-11	ELECT	10uF	20%	50V
C902	1-124-721-11	ELECT	10uF	20%	50V
C903	1-124-721-11	ELECT	10uF	20%	50V
C904	1-126-964-11	ELECT	10uF	20%	50V
C905	1-126-926-11	ELECT	1000uF	20%	10V
C906	1-124-721-11	ELECT	10uF	20%	50V
C911	1-126-052-11	ELECT	100uF	20%	50V
C912	1-124-721-11	ELECT	10uF	20%	50V
C913	1-126-964-11	ELECT	10uF	20%	50V
C914	1-126-926-11	ELECT	1000uF	20%	10V
C915	1-126-964-11	ELECT	10uF	20%	50V
C916	1-126-926-11	ELECT	1000uF	20%	10V
C917	1-126-933-11	ELECT	100uF	20%	16V
C921	1-126-964-11	ELECT	10uF	20%	50V
C922	1-126-926-11	ELECT	1000uF	20%	10V
C923	1-126-933-11	ELECT	100uF	20%	16V
C931	1-126-933-11	ELECT	100uF	20%	16V
C932	1-126-960-11	ELECT	1uF	20%	50V
C933	1-164-159-11	CERAMIC	0.1uF		50V
C934	1-162-306-11	CERAMIC	0.01uF	30%	16V
C935	1-164-159-11	CERAMIC	0.1uF		50V
C941	1-126-947-11	ELECT	47uF	20%	35V
C942	1-164-159-11	CERAMIC	0.1uF		50V
C943	1-164-159-11	CERAMIC	0.1uF		50V
C945	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN101	1-766-955-11	CONNECTOR, BOARD TO BOARD 11P			
* CN102	1-566-856-11	SOCKET, CONNECTOR 5P			
CN103	1-770-731-11	CONNECTOR, BOARD TO BOARD 12P			
CN105	1-784-776-11	CONNECTOR, FFC 15P			
CN106	1-568-683-11	PIN, CONNECTOR (PC BAORD) 2P			
CN107	1-784-786-11	CONNECTOR, FFC 25P			
CN109	1-784-780-11	CONNECTOR, FFC 19P			
* CN110	1-568-954-11	PIN, CONNECTOR 5P			
CN111	1-784-792-11	CONNECTOR, FFC 31P			
		< DIODE >			
D171	8-719-921-40	DIODE MTZJ-T-72-4.7B			
D301	8-719-109-85	DIODE MTZJ-T-72-5.1B			
D302	8-719-911-19	DIODE 1SS133T-72			
D901	8-719-200-82	DIODE 11ES2-TA2B			
D911	8-719-200-82	DIODE 11ES2-TA2B			
D912	8-719-911-19	DIODE 1SS133T-72			
D913	8-719-911-19	DIODE 1SS133T-72			
D914	8-719-911-19	DIODE 1SS133T-72			
D921	8-719-200-82	DIODE 11ES2-TA2B			

Ref. No.	Part No.	Description		Remark
D922	8-719-911-19	DIODE 1SS133T-72		
D923	8-719-911-19	DIODE 1SS133T-72		
D924	8-719-911-19	DIODE 1SS133T-72		
D941	8-719-911-19	DIODE 1SS133T-72		
D942	8-719-911-19	DIODE 1SS133T-72		
D943	8-719-911-19	DIODE 1SS133T-72		
D944	8-719-911-19	DIODE 1SS133T-72		
D945	8-719-911-19	DIODE 1SS133T-72		
D946	8-719-911-19	DIODE 1SS133T-72		
		< GROUND TERMINAL >		
EP1	1-537-770-21	TERMINAL BOARD, GROUND		
EP2	1-537-770-21	TERMINAL BOARD, GROUND		
		< IC >		
IC121	8-749-923-05	TORX178A (OPTICAL DIGITAL IN)		
IC131	8-759-916-12	IC SN74HC00AN		
IC171	8-759-822-09	IC LB1641		
IC301	8-759-494-39	IC M62428AFP		
IC302	8-759-000-48	IC MC14052BCP		
IC401	8-759-560-51	IC BU1924F (AEP,UK)		
IC501	8-759-648-14	IC M30620ECFP-A21		
IC901	8-759-394-35	IC BA12T		
IC902	8-759-604-86	IC M5F7807L		
IC903	8-759-450-49	IC BA07T		
IC911	8-759-450-47	IC BA05T		
IC912	8-759-445-59	IC BA033T		
IC913	8-759-450-47	IC BA05T		
IC921	8-759-450-47	IC BA05T		
IC931	8-759-481-02	IC M62016L		
IC941	8-759-637-58	IC PST592C-T		
		< JACK >		
J101	1-779-653-12	JACK, PIN (TAPE IN/OUT)		
		< TRANSISTOR >		
Q101	8-729-620-05	TRANSISTOR	2SC2603TP-EF	
Q102	8-729-900-63	TRANSISTOR	UN4112-TA	
Q111	8-729-048-96	TRANSISTOR	2SK1825	
Q112	8-729-048-96	TRANSISTOR	2SK1825	
Q113	8-729-900-63	TRANSISTOR	UN4112-TA	
Q114	8-729-422-73	TRANSISTOR	UN4212-TA	
Q151	8-729-620-05	TRANSISTOR	2SC2603TP-EF	
Q301	8-729-620-05	TRANSISTOR	2SC2603TP-EF	
Q351	8-729-620-05	TRANSISTOR	2SC2603TP-EF	
Q401	8-729-620-05	TRANSISTOR	2SC2603TP-EF (AEP,UK)	
Q501	8-729-422-73	TRANSISTOR	UN4212-TA	
Q551	8-729-422-73	TRANSISTOR	UN4212-TA	
Q552	8-729-900-63	TRANSISTOR	UN4112-TA	
Q911	8-729-118-01	TRANSISTOR	2SB1014TP-34	
Q912	8-729-422-73	TRANSISTOR	UN4212-TA	
Q921	8-729-620-05	TRANSISTOR	2SC2603TP-EF	
Q931	8-729-620-05	TRANSISTOR	2SC2603TP-EF	
Q932	8-729-422-73	TRANSISTOR	UN4212-TA	
Q941	8-729-620-05	TRANSISTOR	2SC2603TP-EF	

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R101	1-249-441-11	CARBON	100K	5%	1/4W	
R102	1-249-417-11	CARBON	1K	5%	1/4W	F
R103	1-249-429-11	CARBON	10K	5%	1/4W	
R104	1-249-417-11	CARBON	1K	5%	1/4W	F
R105	1-249-441-11	CARBON	100K	5%	1/4W	
R106	1-249-441-11	CARBON	100K	5%	1/4W	
R111	1-249-393-11	CARBON	10	5%	1/4W	F
R112	1-249-393-11	CARBON	10	5%	1/4W	F
R113	1-249-437-11	CARBON	47K	5%	1/4W	
R114	1-249-441-11	CARBON	100K	5%	1/4W	
R121	1-249-413-11	CARBON	470	5%	1/4W	F
R131	1-249-441-11	CARBON	100K	5%	1/4W	
R132	1-249-417-11	CARBON	1K	5%	1/4W	F
R133	1-249-417-11	CARBON	1K	5%	1/4W	F
R141	1-249-417-11	CARBON	1K	5%	1/4W	F
R151	1-249-441-11	CARBON	100K	5%	1/4W	
R152	1-249-417-11	CARBON	1K	5%	1/4W	F
R153	1-249-429-11	CARBON	10K	5%	1/4W	
R154	1-249-417-11	CARBON	1K	5%	1/4W	F
R155	1-249-441-11	CARBON	100K	5%	1/4W	
R156	1-249-441-11	CARBON	100K	5%	1/4W	
R171	1-249-409-11	CARBON	220	5%	1/4W	F
R172	1-249-414-11	CARBON	560	5%	1/4W	F
R302	1-247-843-11	CARBON	3.3K	5%	1/4W	
R303	1-249-441-11	CARBON	100K	5%	1/4W	
R304	1-249-417-11	CARBON	1K	5%	1/4W	F
R306	1-249-417-11	CARBON	1K	5%	1/4W	F
R307	1-249-417-11	CARBON	1K	5%	1/4W	F
R308	1-249-441-11	CARBON	100K	5%	1/4W	
R309	1-249-437-11	CARBON	47K	5%	1/4W	
R312	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R313	1-247-885-00	CARBON	180K	5%	1/4W	
R314	1-249-435-11	CARBON	33K	5%	1/4W	
R315	1-247-903-00	CARBON	1M	5%	1/4W	
R316	1-249-441-11	CARBON	100K	5%	1/4W	
R321	1-249-435-11	CARBON	33K	5%	1/4W	
R322	1-247-903-00	CARBON	1M	5%	1/4W	
R323	1-249-417-11	CARBON	1K	5%	1/4W	F
R324	1-249-417-11	CARBON	1K	5%	1/4W	F
R325	1-249-417-11	CARBON	1K	5%	1/4W	F
R326	1-249-413-11	CARBON	470	5%	1/4W	F
R352	1-247-843-11	CARBON	3.3K	5%	1/4W	
R353	1-249-441-11	CARBON	100K	5%	1/4W	
R354	1-249-417-11	CARBON	1K	5%	1/4W	F
R356	1-249-417-11	CARBON	1K	5%	1/4W	F
R357	1-249-417-11	CARBON	1K	5%	1/4W	F
R358	1-249-441-11	CARBON	100K	5%	1/4W	
R359	1-249-437-11	CARBON	47K	5%	1/4W	
R362	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R363	1-247-885-00	CARBON	180K	5%	1/4W	
R364	1-249-435-11	CARBON	33K	5%	1/4W	
R365	1-247-903-00	CARBON	1M	5%	1/4W	
R366	1-249-441-11	CARBON	100K	5%	1/4W	
R401	1-249-417-11	CARBON	1K	5%	1/4W	F (AEP,UK)

MAIN

Ref. No.	Part No.	Description			Remark
R402	1-249-417-11	CARBON	1K	5%	1/4W F (AEP,UK)
R403	1-249-429-11	CARBON	10K	5%	1/4W (AEP,UK)
R404	1-259-880-11	CARBON	2.2M	5%	1/4W (AEP,UK)
R405	1-249-417-11	CARBON	1K	5%	1/4W F (AEP,UK)
R501	1-247-807-31	CARBON	100	5%	1/4W
R502	1-249-417-11	CARBON	1K	5%	1/4W F
R503	1-249-417-11	CARBON	1K	5%	1/4W F
R504	1-249-417-11	CARBON	1K	5%	1/4W F
R505	1-249-437-11	CARBON	47K	5%	1/4W
R506	1-249-417-11	CARBON	1K	5%	1/4W F
R507	1-247-807-31	CARBON	100	5%	1/4W
R508	1-247-807-31	CARBON	100	5%	1/4W
R509	1-247-807-31	CARBON	100	5%	1/4W
R510	1-249-417-11	CARBON	1K	5%	1/4W F
R511	1-247-807-31	CARBON	100	5%	1/4W
R512	1-247-807-31	CARBON	100	5%	1/4W
R513	1-247-807-31	CARBON	100	5%	1/4W
R514	1-247-807-31	CARBON	100	5%	1/4W
R515	1-247-807-31	CARBON	100	5%	1/4W
R516	1-247-807-31	CARBON	100	5%	1/4W
R517	1-247-807-31	CARBON	100	5%	1/4W
R518	1-247-807-31	CARBON	100	5%	1/4W
R519	1-249-417-11	CARBON	1K	5%	1/4W F
R520	1-249-417-11	CARBON	1K	5%	1/4W F
R521	1-247-807-31	CARBON	100	5%	1/4W
R522	1-247-807-31	CARBON	100	5%	1/4W
R523	1-249-417-11	CARBON	1K	5%	1/4W F
R524	1-247-807-31	CARBON	100	5%	1/4W
R525	1-249-417-11	CARBON	1K	5%	1/4W F
R526	1-247-807-31	CARBON	100	5%	1/4W
R527	1-247-807-31	CARBON	100	5%	1/4W
R528	1-247-807-31	CARBON	100	5%	1/4W
R529	1-247-807-31	CARBON	100	5%	1/4W
R530	1-247-807-31	CARBON	100	5%	1/4W
R531	1-249-417-11	CARBON	1K	5%	1/4W F
R532	1-249-417-11	CARBON	1K	5%	1/4W F
R533	1-249-417-11	CARBON	1K	5%	1/4W F
R534	1-249-417-11	CARBON	1K	5%	1/4W F
R535	1-249-417-11	CARBON	1K	5%	1/4W F
R536	1-249-417-11	CARBON	1K	5%	1/4W F
R537	1-249-417-11	CARBON	1K	5%	1/4W F
R538	1-249-417-11	CARBON	1K	5%	1/4W F
R539	1-249-417-11	CARBON	1K	5%	1/4W F
R540	1-249-417-11	CARBON	1K	5%	1/4W F
R541	1-249-417-11	CARBON	1K	5%	1/4W F
R542	1-249-417-11	CARBON	1K	5%	1/4W F
R543	1-249-417-11	CARBON	1K	5%	1/4W F
R544	1-249-417-11	CARBON	1K	5%	1/4W F
R545	1-249-417-11	CARBON	1K	5%	1/4W F
R547	1-247-807-31	CARBON	100	5%	1/4W
R548	1-247-807-31	CARBON	100	5%	1/4W
R549	1-247-807-31	CARBON	100	5%	1/4W
R550	1-247-807-31	CARBON	100	5%	1/4W
R551	1-249-437-11	CARBON	47K	5%	1/4W
R552	1-249-429-11	CARBON	10K	5%	1/4W
R553	1-249-417-11	CARBON	1K	5%	1/4W F
R554	1-249-417-11	CARBON	1K	5%	1/4W F
R555	1-249-429-11	CARBON	10K	5%	1/4W
R556	1-249-429-11	CARBON	10K	5%	1/4W
R557	1-249-429-11	CARBON	10K	5%	1/4W
R558	1-249-429-11	CARBON	10K	5%	1/4W
R559	1-249-429-11	CARBON	10K	5%	1/4W
R560	1-249-427-11	CARBON	6.8K	5%	1/4W F
R561	1-249-427-11	CARBON	6.8K	5%	1/4W F
R562	1-249-427-11	CARBON	6.8K	5%	1/4W F
R563	1-249-417-11	CARBON	1K	5%	1/4W F
R564	1-249-417-11	CARBON	1K	5%	1/4W F
R565	1-249-426-11	CARBON	5.6K	5%	1/4W (AEP,UK)
R565	1-249-412-11	CARBON	390	5%	1/4W F (AUS,AR,HK,MY,SP,KR,CH)
R565	1-249-418-11	CARBON	1.2K	5%	1/4W F (JE)
R566	1-249-416-11	CARBON	820	5%	1/4W F (AEP,UK)
R566	1-249-426-11	CARBON	5.6K	5%	1/4W (AUS,AR,HK,JE,MY,SP,KR,CH)
R567	1-247-843-11	CARBON	3.3K	5%	1/4W
R568	1-249-429-11	CARBON	10K	5%	1/4W
R569	1-249-429-11	CARBON	10K	5%	1/4W
R570	1-249-429-11	CARBON	10K	5%	1/4W
R571	1-249-441-11	CARBON	100K	5%	1/4W
R572	1-249-441-11	CARBON	100K	5%	1/4W
R573	1-247-807-31	CARBON	100	5%	1/4W
R911	1-249-409-11	CARBON	220	5%	1/4W F
R921	1-247-807-31	CARBON	100	5%	1/4W
R922	1-249-429-11	CARBON	10K	5%	1/4W
R923	1-249-433-11	CARBON	22K	5%	1/4W
R924	1-249-411-11	CARBON	330	5%	1/4W
R931	1-247-887-00	CARBON	220K	5%	1/4W
R932	1-249-441-11	CARBON	100K	5%	1/4W
R933	1-249-433-11	CARBON	22K	5%	1/4W
R941	1-249-413-11	CARBON	470	5%	1/4W F
R942	1-249-429-11	CARBON	10K	5%	1/4W
R943	1-249-437-11	CARBON	47K	5%	1/4W
R946	1-249-433-11	CARBON	22K	5%	1/4W
R947	1-249-437-11	CARBON	47K	5%	1/4W
R949	1-249-429-11	CARBON	10K	5%	1/4W
		< SWITCH >			
S101	1-762-871-11	SWITCH, KEYBOARD (RESET)			
		< VIBRATOR >			
X401	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz) (AEP,UK)			
X501	1-781-107-21	VIBRATOR, SERAMIC (16MHz)			
X502	1-567-098-41	VIBRATOR, CRYSTAL (32.768MHz)			

****

Ref. No.	Part No.	Description				Remark
	A-4426-073-A	PANEL BOARD, COMPLETE				
		**********************				
*	1-690-880-31	LEAD (WITH CONNECTOR)				
	4-221-103-01	HOLDER (FL)				
		< CAPACITOR >				
C601	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C602	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C603	1-124-261-00	ELECT	10uF	20%	50V	
C604	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C605	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C606	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C623	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C635	1-124-261-00	ELECT	10uF	20%	50V	
C636	1-124-234-00	ELECT	22uF	20%	16V	
C640	1-162-282-31	CERAMIC	100PF	10%	50V	
C647	1-162-286-31	CERAMIC	220PF	10%	50V	
C648	1-162-286-31	CERAMIC	220PF	10%	50V	
C649	1-162-286-31	CERAMIC	220PF	10%	50V	
C650	1-162-286-31	CERAMIC	220PF	10%	50V	
C651	1-162-286-31	CERAMIC	220PF	10%	50V	
C652	1-162-286-31	CERAMIC	220PF	10%	50V	
C653	1-162-286-31	CERAMIC	220PF	10%	50V	
C654	1-162-286-31	CERAMIC	220PF	10%	50V	
C655	1-162-286-31	CERAMIC	220PF	10%	50V	
C656	1-162-286-31	CERAMIC	220PF	10%	50V	
C657	1-162-286-31	CERAMIC	220PF	10%	50V	
C658	1-162-286-31	CERAMIC	220PF	10%	50V	
C659	1-162-286-31	CERAMIC	220PF	10%	50V	
C660	1-162-286-31	CERAMIC	220PF	10%	50V	
C661	1-162-286-31	CERAMIC	220PF	10%	50V	
C662	1-162-286-31	CERAMIC	220PF	10%	50V	
C664	1-124-261-00	ELECT	10uF	20%	50V	
C665	1-124-589-11	ELECT	47uF	20%	16V	
C671	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C672	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C673	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C674	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C681	1-249-425-11	CARBON	4.7K	5%	1/4W	F
C686	1-162-600-11	CERAMIC	0.0047uF	30%	16V	
C687	1-162-306-11	CERAMIC	0.01uF	30%	16V	
		< CONNECTOR >				
CN601	1-784-753-11	CONNECTOR, FFC 31P				
		< DIODE >				
D602	8-719-032-86	DIODE SEL5420E-TP15 (►II(MD))				
D603	8-719-032-98	DIODE SEL5820A-TP15 (►II(MD))				
D604	8-719-812-44	DIODE SEL5220S-TP15 (●REC(MD))				
D605	8-719-812-44	DIODE SEL5220S-TP15 (⏏(MD))				
D606	8-719-032-86	DIODE SEL5420E-TP15 (►II(CD))				
D607	8-719-032-98	DIODE SEL5820A-TP15 (►II(CD))				
D608	8-719-812-44	DIODE SEL5220S-TP15 (⏏(CD))				
D609	8-719-812-44	DIODE SEL5220S-TP15 (I/⏻,STANBY)				
		<FLUORESCENT INDICATOR>				
FL601	1-517-901-11	INDICATOR TUBE, FLUORESCENT				
		< IC >				
IC601	8-759-297-23	IC M66004M8FP				
IC602	8-759-459-85	IC NJL63H400A				
		< JACK >				
J601	1-764-106-21	JACK (PHONES)				
J602	1-764-106-21	JACK (LINE-IN)				
		< TRANSISTOR >				
Q601	8-729-620-05	TRANSISTOR	2SC2603TP-EF			
Q602	8-729-620-05	TRANSISTOR	2SC2603TP-EF			
Q604	8-729-900-80	TRANSISTOR	UN4211-TA			
Q605	8-729-900-80	TRANSISTOR	UN4211-TA			
Q606	8-729-900-80	TRANSISTOR	UN4211-TA			
Q607	8-729-900-80	TRANSISTOR	UN4211-TA			
Q608	8-729-900-80	TRANSISTOR	UN4211-TA			
Q609	8-729-900-80	TRANSISTOR	UN4211-TA			
Q610	8-729-900-80	TRANSISTOR	UN4211-TA			
		< RESISTOR >				
R601	1-249-441-11	CARBON	100K	5%	1/4W	
R602	1-249-441-11	CARBON	100K	5%	1/4W	
R603	1-249-417-11	CARBON	1K	5%	1/4W	F
R604	1-249-417-11	CARBON	1K	5%	1/4W	F
R607	1-249-441-11	CARBON	100K	5%	1/4W	
R608	1-249-434-11	CARBON	27K	5%	1/4W	
R609	1-249-417-11	CARBON	1K	5%	1/4W	F
R610	1-249-417-11	CARBON	1K	5%	1/4W	F
R611	1-249-417-11	CARBON	1K	5%	1/4W	F
R612	1-249-417-11	CARBON	1K	5%	1/4W	F
R615	1-247-807-31	CARBON	100	5%	1/4W	
R616	1-247-807-31	CARBON	100	5%	1/4W	
R617	1-247-807-31	CARBON	100	5%	1/4W	
R618	1-247-807-31	CARBON	100	5%	1/4W	
R619	1-247-807-31	CARBON	100	5%	1/4W	
R620	1-247-807-31	CARBON	100	5%	1/4W	
R621	1-247-807-31	CARBON	100	5%	1/4W	
R624	1-249-407-11	CARBON	150	5%	1/4W	F
R625	1-249-407-11	CARBON	150	5%	1/4W	F
R628	1-249-415-11	CARBON	680	5%	1/4W	F
R630	1-249-412-11	CARBON	390	5%	1/4W	F
R632	1-249-407-11	CARBON	150	5%	1/4W	F
R633	1-249-407-11	CARBON	150	5%	1/4W	F
R636	1-249-413-11	CARBON	470	5%	1/4W	F
R637	1-249-417-11	CARBON	1K	5%	1/4W	F
R639	1-249-393-11	CARBON	10	5%	1/4W	F
R641	1-249-415-11	CARBON	680	5%	1/4W	F
R642	1-249-417-11	CARBON	1K	5%	1/4W	F
R643	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R644	1-247-843-11	CARBON	3.3K	5%	1/4W	
R645	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R646	1-249-415-11	CARBON	680	5%	1/4W	F
R647	1-249-417-11	CARBON	1K	5%	1/4W	F
R648	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R649	1-247-843-11	CARBON	3.3K	5%	1/4W	
R650	1-249-425-11	CARBON	4.7K	5%	1/4W	F

PANEL POWER

Ref. No.	Part No.	Description			Remark
R651	1-249-429-11	CARBON	10K	5%	1/4W
R652	1-249-435-11	CARBON	33K	5%	1/4W
R681	1-162-600-11	CERAMIC	0.0047uF	30%	16V
R682	1-249-441-11	CARBON	100K	5%	1/4W
R686	1-249-425-11	CARBON	4.7K	5%	1/4W F
R687	1-249-441-11	CARBON	100K	5%	1/4W
		< SWITCH >			
S601	1-473-392-11	ENCODER, ROTARY (VOLUME)			
S602	1-762-875-21	SWITCH, KEYBOARD (I/⏻ (POWER)			
S603	1-762-875-21	SWITCH, KEYBOARD (■(CD))			
S604	1-762-875-21	SWITCH, KEYBOARD (►II(CD))			
S605	1-762-875-21	SWITCH, KEYBOARD (⏏(CD))			
S606	1-762-875-21	SWITCH, KEYBOARD (■(MD))			
S607	1-762-875-21	SWITCH, KEYBOARD (►II(MD))			
S608	1-762-875-21	SWITCH, KEYBOARD (⏏(MD))			
S609	1-762-875-21	SWITCH, KEYBOARD (FUNCTION)			
S610	1-762-875-21	SWITCH, KEYBOARD (MD/CD ►► ►►I TUNING+)			
S611	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)			
S612	1-762-875-21	SWITCH, KEYBOARD (MD/CD I◄◄ ◄◄ TUNING-)			
S613	1-762-875-21	SWITCH, KEYBOARD (●REC)			
S614	1-762-875-21	SWITCH, KEYBOARD (SYNC,REC)			
S615	1-762-875-21	SWITCH, KEYBOARD (REPEAT STEREO/MONO)			
S616	1-762-875-21	SWITCH, KEYBOARD (PLAY MODE TUNING MODE)			

****

Ref. No.	Part No.	Description			Remark
	A-4426-081-A	POWER BOARD, COMPLETE (AEP,UK) ******************************			
	A-4426-088-A	POWER BOARD, COMPLETE ********************** (AUS,AR,HK,JE,MY,SP,KR,CH)			
	1-533-293-11	FUSE HOLDER (AUS,AR,HK,JE,MY,SP,KR,CH)			
		< CAPACITOR >			
C971	1-136-165-00	FILM	0.1uF	5%	50V
C972	1-126-936-11	ELECT	3300uF	20%	16V
C973	1-136-165-00	FILM	0.1uF	5%	50V
C974	1-126-968-11	ELECT	100uF	20%	50V
C975	1-126-964-11	ELECT	10uF	20%	50V
C976	1-126-964-11	ELECT	10uF	20%	50V
C981	1-136-165-00	FILM	0.1uF	5%	50V
C982	1-115-364-11	ELECT	22000uF	20%	16V
C983	1-136-165-00	FILM	0.1uF	5%	50V
C984	1-126-943-11	ELECT	2200uF	20%	25V
⚠C991	1-113-925-00	CERAMIC	0.01uF		250V
C992	1-126-961-11	ELECT	2.2uF	20%	50V
		< CONNECTOR >			
CN991	1-564-321-00	PIN, CONNECTOR 2P			
* CN992	1-564-321-21	PIN, CONNECTOR 2P			AEP,UK
* CN992	1-564-687-11	PIN, CONNECTOR 3P (AUS,AR,HK,JE,MY,SP,KR,CH)			
* CN993	1-564-519-11	PLUG, CONNECTOR 4P			
* CN994	1-770-730-11	CONNECTOR, BOARD TO BOARD 11P			
		< DIODE >			
D971	8-719-200-82	DIODE	11ES2-TA2B		
D972	8-719-200-82	DIODE	11ES2-TA2B		
D973	8-719-200-82	DIODE	11ES2-TA2B		
D974	8-719-200-82	DIODE	11ES2-TA2B		
D975	8-719-200-82	DIODE	11ES2-TA2B		
D976	8-719-200-82	DIODE	11ES2-TA2B		
D977	8-719-200-82	DIODE	11ES2-TA2B		
D978	8-719-200-82	DIODE	11ES2-TA2B		
D979	8-719-983-86	DIODE	MTZJ-T-72-33A		
D980	8-719-947-12	DIODE	MTZJ-T-72-4.7A		
D981	8-719-025-03	DIODE	RBA-402		
D982	8-719-200-82	DIODE	11ES2-TA2B		
D985	8-719-200-82	DIODE	11ES2-TA2B		
D986	8-719-911-19	DIODE	1SS133T-72		
D987	8-719-911-19	DIODE	1SS133T-72		
D991	8-719-911-19	DIODE	1SS133T-72		
D992	8-719-911-19	DIODE	1SS133T-72		
D993	8-719-911-19	DIODE	1SS133T-72		
		< FUSE >			
⚠F991	1-532-388-31	FUSE (T2AL/250V) (AUS,AR,HK,JE,MY,SP,KR,CH)			
		< TRANSISTOR >			
Q971	8-729-141-83	TRANSISTOR	2SB1375		
Q972	8-729-922-37	TRANSISTOR	2SD2144S-TP-UVW		
Q973	8-729-922-37	TRANSISTOR	2SD2144S-TP-UVW		
Q974	8-729-900-63	TRANSISTOR	UN4112-TA		
Q975	8-729-620-05	TRANSISTOR	2SC2603TP-EF		
Q991	8-729-620-05	TRANSISTOR	2SC2603TP-EF		
		< RESISTOR >			
⚠R971	1-219-153-11	FUSIBLE	10	5%	1/4W F
R972	1-249-421-11	CARBON	2.2K	5%	1/4W F
R973	1-249-429-11	CARBON	10K	5%	1/4W
R974	1-249-413-11	CARBON	470	5%	1/4W F
R975	1-249-413-11	CARBON	470	5%	1/4W F
R976	1-249-429-11	CARBON	10K	5%	1/4W
R977	1-249-429-11	CARBON	10K	5%	1/4W
R978	1-249-441-11	CARBON	100K	5%	1/4W
R979	1-249-417-11	CARBON	1K	5%	1/4W F
R980	1-249-417-11	CARBON	1K	5%	1/4W F
⚠R981	1-219-121-81	FUSIBLE	0.22	5%	1/4W F
⚠R982	1-219-124-81	FUSIBLE	0.68	5%	1/4W F
R991	1-249-429-11	CARBON	10K	5%	1/4W
R992	1-249-429-11	CARBON	10K	5%	1/4W
R993	1-249-417-11	CARBON	1K	5%	1/4W F
R994	1-249-417-11	CARBON	1K	5%	1/4W F
R995	1-247-843-11	CARBON	3.3K	5%	1/4W
		< RELAY >			
⚠RY991	1-755-276-11	RELAY, POWER			

以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。	The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
		< SWITCH >				
⚠S991	1-571-309-11	SWITCH (VOLTAGE SELESTOR)				(AUS,AR,HK,JE,MY,SP,KR,CH)
		< TRANSFORMER >				
⚠T900	1-433-969-11	TRANSFORMER, POWER (AEP,UK)				
⚠T900	1-433-970-11	TRANSFORMER, POWER				(AUS,AR,HK,JE,MY,SP,KR,CH)
⚠T901	1-433-965-11	TRANSFORMER, SUB POWER (AEP,UK)				
⚠T901	1-433-966-11	TRANSFORMER, SUB POWER				(AUS,AR,HK,JE,MY,SP,KR,CH)
T992	1-424-485-11	FILTER, LINE				

****

Ref. No.	Part No.	Description				Remark
	1-674-628-11	SP BOARD *******				
		< CAPACITOR >				
C881	1-126-959-11	ELECT	0.47uF	20%	50V	
C882	1-136-495-11	FILM	0.068uF	5%	50V	
C883	1-136-495-11	FILM	0.068uF	5%	50V	
C884	1-136-495-11	FILM	0.068uF	5%	50V	
C885	1-136-495-11	FILM	0.068uF	5%	50V	
		< CONNECTOR >				
* CN881	1-770-747-11	CONNECTOR, BOARD TO BOARD 12P				
* CN882	1-770-747-11	CONNECTOR, BOARD TO BOARD 12P				
		< DIODE >				
D881	8-719-911-19	DIODE 1SS133T-72				
D882	8-719-911-19	DIODE 1SS133T-72				
		< COIL >				
L881	1-420-872-00	COIL, AIR-CORE				
L882	1-420-872-00	COIL, AIR-CORE				
		< TRANSISTOR >				
Q881	8-729-111-29	TRANSISTOR	2SD1616-TP-K			
		< RESISTOR >				
⚠R881	1-215-864-00	METAL OXIDE	150	5%	1W	F
⚠R882	1-215-864-00	METAL OXIDE	150	5%	1W	F
⚠R883	1-215-864-00	METAL OXIDE	150	5%	1W	F
⚠R884	1-215-864-00	METAL OXIDE	150	5%	1W	F
R885	1-247-903-00	CARBON	1M	5%	1/4W	
R886	1-249-431-11	CARBON	15K	5%	1/4W	
R887	1-249-431-11	CARBON	15K	5%	1/4W	
R888	1-249-429-11	CARBON	10K	5%	1/4W	
R889	1-247-843-11	CARBON	3.3K	5%	1/4W	
R890	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R891	1-215-891-11	METAL OXIDE	680	5%	2W	F (AEP,UK)
⚠R891	1-216-454-11	METAL OXIDE	390	5%	2W	F (AUS,AR,HK,JE,MY,SP,KR,CH)
R892	1-260-076-11	CARBON	10	5%	1/2W	
R893	1-260-076-11	CARBON	10	5%	1/2W	
R894	1-260-076-11	CARBON	10	5%	1/2W	
R895	1-260-076-11	CARBON	10	5%	1/2W	
⚠R896	1-215-891-11	METAL OXIDE	680	5%	2W	F (AEP,UK)
⚠R896	1-216-454-11	METAL OXIDE	390	5%	2W	F (AUS,AR,HK,JE,MY,SP,KR,CH)
		< RELAY >				
RY881	1-515-921-11	RELAY (12V)				
		< TERMINAL >				
TM881	1-537-238-31	TERMINAL BOARD (SPEAKER)				

****

Ref. No.	Part No.	Description	Remark
	1-668-111-11	SW BOARD *******	
		< CONNECTOR >	
* CN601	1-506-486-11	PIN, CONNECTOR 7P	
		< SWITCH >	
S601	1-572-126-21	SWITCH, PUSH (1 KEY)	
S602	1-572-126-21	SWITCH, PUSH (1 KEY)	
S604	1-771-264-11	SWITCH, PUSH(DETECTION)(1 KEY)	

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *************	
16	1-773-212-11	WIRE (FLAT TYPE) (25 CORE)	
17	1-791-211-11	WIRE (FLAT TYPE) (23 CORE)	
18	1-777-240-11	WIRE (FLAT TYPE) (21 CORE)	
22	1-791-223-11	WIRE (FLAT TYPE) (31 CORE)	
55	1-674-628-11	SP BOARD	
57	1-693-473-41	TUNER (EXCEPT JE)	
59	1-773-115-11	WIRE (FLAT TYPE) (19 CORE)	
60	1-773-006-11	WIRE (FLAT TYPE) (15 CORE)	
61	1-569-972-21	SOCKET, SHORT 2P	
⚠62	1-696-847-11	CORD, POWER (AUS)	
⚠62	1-769-744-11	CORD, POWER (AEP,UK,HK,JE,MY,SP,KR,CH)	
⚠62	1-783-941-11	CORD, POWER (AR)	
63	1-569-008-21	ADAPTOR, CONVERSION 2P (JE)	
63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK,HK)	
158	1-667-954-11	FLEXIBLE BOARD	
⚠160	8-583-058-01	OPTICAL PICK-UP KMS-260B/JIN	
⚠255	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP	
256	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
FL601	1-517-901-11	INDICATOR TUBE, FLUORESCENT	
HR901	1-500-502-11	HEAD, OVER WRITE	
HR901	1-500-502-21	HEAD, OVER WRITE	
S1	1-771-799-11	SWITCH, LEVER (SLIDE)(LOADING SWITCH)	
S102	1-762-148-21	SWITCH, PUSH (2 KEY)	
⚠T900	1-433-969-11	TRANSFORMER, SUB POWER (AEP,UK)	
⚠T900	1-433-970-11	TRANSFORMER, SUB POWER (EXCEPT AEP,UK)	
⚠T901	1-433-965-11	TRANSFORMER, POWER (AEP,UK)	

****

以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。	The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		*************	
		HARDWARE LIST	
		*************	
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 TT(B)	
#2	7-685-650-91	SCREW +BVTP 3X16 TYPE2 TT(B)	
#3	7-685-871-01	SCREW +BVTT 3X6 (S)	
#4	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#5	7-627-852-08	SCREW,PRECISION +P 1.7X2.5	
#6	7-621-772-40	SCREW +B 2X8	
#7	7-621-772-20	SCREW +B 2X5	
#8	7-685-133-19	SCREW (DIA. 2.6) (IT3B)	
#9	7-621-772-10	SCREW +B 2X4	
#10	7-621-772-30	SCREW +B 2X6	
#11	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	

MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.1	2001.06	Addition of CD mechanism (CDM55C-5BD32) and base unit (BU-5BD32). (SPM-01016)
1.0	1999.08	New.